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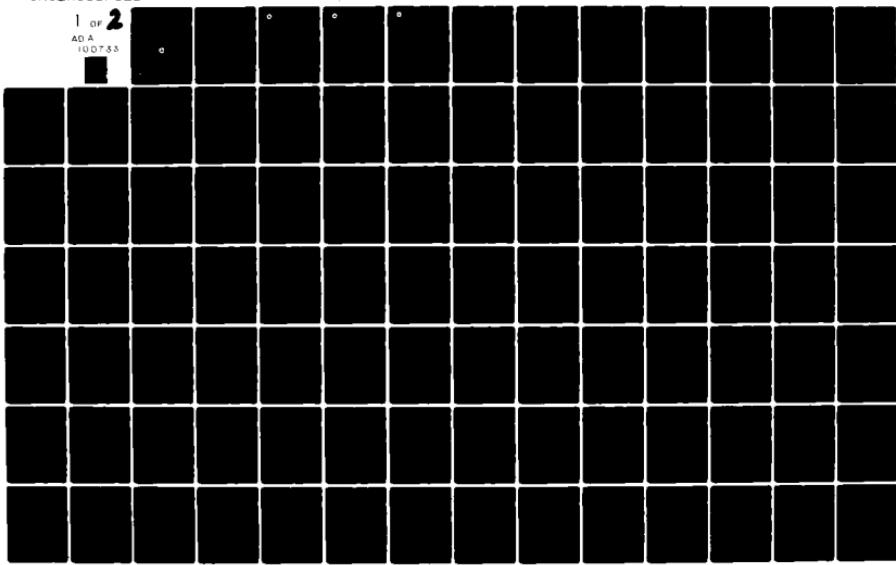
FEDERAL AVIATION ADMINISTRATION WASHINGTON DC  
THE EFFECT OF THE AIRLINE DEREGULATION ACT ON THE LEVEL OF AIR --ETC(U)  
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LEVEL II

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# THE EFFECT OF THE AIRLINE DEREGULATION ACT ON THE LEVEL OF AIR SAFETY.

Annual Report of the Secretary of Transportation  
to the United States Congress pursuant to  
Section 107 of the Airline Deregulation Act of  
1978 (P.L. 95-504)

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JANUARY 1980

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U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
Washington, D.C. 20590

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THE SECRETARY OF TRANSPORTATION  
WASHINGTON, D.C. 20590

MAY 15 1980

The Honorable Walter F. Mondale  
President of the Senate  
Washington, D.C. 20510

File

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Dear Mr. President:

I am pleased to transmit the enclosed report entitled "The Effect of the Airline Deregulation Act on the Level of Air Safety." This report was prepared in response to the requirements of Section 107 of the Airline Deregulation Act of 1978 (P.L. 95-504). It reviews the impact of deregulation on air carrier operations in calendar year 1979, with emphasis on the carriers extensively involved in scheduled domestic passenger service in the contiguous United States and statistically explores the accident, incident, and violation records of these carriers.

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A copy of this report has also been transmitted to Thomas P. O'Neill, Jr., Speaker of the House of Representatives, and Marvin S. Cohen, Chairman, Civil Aeronautics Board.

Sincerely,

Neil Goldschmidt

Enclosure



THE SECRETARY OF TRANSPORTATION  
WASHINGTON, D.C. 20590

MAY 15 1980

The Honorable Thomas P. O'Neill, Jr.  
Speaker of the House of Representatives  
Washington, D.C. 20515

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THE SECRETARY OF TRANSPORTATION  
WASHINGTON, D.C. 20590

MAY 15 1980

The Honorable Marvin S. Cohen  
Chairman, Civil Aeronautics Board  
1825 Connecticut Avenue, N.W.  
Washington, D.C. 20428

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Sincerely,

Neil Goldschmidt

Enclosure

REPORT TO THE CONGRESS

THE EFFECT OF THE AIRLINE DEREGULATION ACT  
OF 1978  
ON THE LEVEL OF AIR SAFETY

Submitted By:

THE SECRETARY OF TRANSPORTATION,  
UNITED STATES DEPARTMENT OF TRANSPORTATION

January, 1980

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## INTRODUCTION

Anticipating the effect that deregulation would have on the air carrier industry, including the commuter airlines, and to a lesser degree the entire aviation community, the Federal Aviation Administration, in close coordination with the Secretary of Transportation, has taken significant steps to ensure that the level of air safety would not be adversely affected. The purpose of this introduction is to summarize the most significant steps taken by the FAA to anticipate and deal with aviation safety issues arising in the era of airline economic deregulation. These actions have been major factors in the continued high level of air safety enjoyed by the American public and will facilitate the reader's understanding of the accident, incident, and violation information contained in this report.

### A. DOT POLICY REGARDING SAFETY AND DEREGULATION.

In his testimony on April 1, 1977, before the Subcommittee on Aviation (Senate Committee on Commerce, Science, and Transportation) the Secretary of Transportation expressed his commitment to maintain the level of safety in the era of airline deregulation. He explicitly recognized the need to ensure the safety of commuter operations. The FAA Administrator reinforced the DOT commitment on September 8, 1977, before the Government Activities and Transportation Subcommittee of the Committee on Government Operations, as follows:

"We in the FAA do not take our aviation safety responsibilities lightly, and we will take whatever action is necessary to assure that the United States' aviation safety record remains the best in the world. I have every confidence that it will. The effect on the American public of aviation regulatory reform will not be a negative one in terms of decreased safety, but will be a positive one that brings with it improved air service and competitive fares."

### B. COMMUTER SAFETY RULES.

Early in 1977, it became apparent that economic deregulation of the nation's air carriers would be speedily accomplished as one of the priority legislative goals of President Carter's administration. The DOT anticipated that profound changes in the operations of commuter air carriers would result. Consequently, the FAA directed that the then existing project to upgrade Part 135 of the Federal Aviation Regulations be completed at top speed. The Administrator's leadership not only produced a massive, far reaching overhaul of that important commuter regulation, but also it set a record for prompt completion. That project, which justifiably has been recognized as the largest, most complex rulemaking action ever accomplished by the FAA, proceeded from the notice of rulemaking issuance to final rule promulgation in slightly more than 13 months.

The revised Part 135, which imposed substantially more stringent requirements on commuter air carrier operations, was the first and the keystone element in a three-step program developed by the Administrator in anticipation of deregulation. The other two, announced on September 26, 1978, were:

1. A special regulation to permit operation of certain commuter airplanes at more efficient gross weights subject to stiffer airworthiness requirements. The notice on this was issued on September 26, 1978, and the final rule was adopted on September 7, 1979.
2. Development of a new commuter type airplane certification Part 24 to ensure that new developments and state-of-the-art technology are employed. FAA regulatory review proposals were circulated for comment on December 28, 1978, and the Part 24 Regulatory Review Conference was held on September 17, 1979, in Phoenix, Arizona.

C. SPECIAL FEDERAL AVIATION REGULATION #38.

On December 12, 1978, the FAA issued a regulation responsive to the Airline Deregulation Act and related actions by the CAB to ease the burden on, and simplify the procedures for, the carriers. The regulation provided for only one certificate to be issued to each air carrier which covers all operations that the carrier conducts under Parts 121, 127, and 135 of the Federal Aviation Regulations. It also provides for an FAA operating certificate to be issued to non-air carrier operators. This certificate will cover all non-air carrier operations conducted under Parts 121, 123, and 135 of the regulations. The regulation thus eliminates multiple safety certificates and provides for operations specifications specifically tailored to the types of operations which the operator is authorized to conduct. For example, a scheduled domestic carrier operating large aircraft under the provisions of FAR Part 121 can also operate a commuter airline under the provisions of Part 135 without holding separate certificates for these operations.

D. TWO-STEP REORGANIZATION OF FLIGHT STANDARDS SERVICE.

Recognizing that commuters are similar in many respects to certified air carriers, in December 1978 the Administrator, with the concurrence of the Secretary of Transportation, moved the responsibility for commuter and air taxi regulation from the General Aviation Division to the Air Carrier Division of the Flight Standards Service.

The second step of the reorganization was completed in July 1979 when, with the concurrence of the Secretary, all of the safety related functions of the FAA were reorganized and consolidated under the newly created Associate Administrator for Aviation Standards.

E. FAA - CAB WORKING RELATIONSHIP.

The FAA and CAB signed a letter of agreement which established procedures and functions for both agencies in meeting the challenges of deregulation. Personnel from the two agencies meet frequently and exchange ideas on subjects of mutual interest. The FAA, upon request by the CAB, participates in CAB fitness evaluation hearings on commuter air carriers.

F. AIRSPACE SAFETY.

The FAA conducted a comprehensive, systemwide study of airspace safety as part of its commitment to maintain high levels of safety in the current operating environment. Notice No. 78-19 (44 FR 1322; 1/4/79), which proposed certain changes in the en route environment, was withdrawn after extensive public comment demonstrated that other alternatives to en route proposals should be developed (44 FR 53416; 9/13/79). However, in withdrawing that notice, the agency made it clear that it was not scaling down its commitment to maintain a safe operating environment, and stated that it was proceeding with plans to propose a substantial number of additional or revised terminal control areas (TCA's). Since September 1979, the agency has issued notices of proposed rulemaking for two new TCA's and has 35 other TCA's under consideration.

G. REVISED ENFORCEMENT PROGRAM

On March 16, 1979, the Administrator of the FAA announced, and ordered the implementation of, his new enforcement program designed to improve aviation safety. Under this program, the Administrator:

1. Issued a new enforcement policy order which stated, in part, that: "With the passage of the Airline Deregulation Act of 1978 and its implementation, many new operators will enter the field of commercial aviation and present operators will expand or upgrade their operations. These new activities will require particular vigilance to ensure compliance with the congressional mandate in the Act that the highest degree of safety in air transportation and air commerce be maintained. There must be a high level of surveillance and investigation of these operations to ensure that potential problems be promptly identified and corrected before there is any derogation of safety. Special attention must be given to commuter and air taxi operators falling under the stringent requirements of new Part 135. These statutory changes require that the agency's enforcement policy be reemphasized and redefined;"
2. Ordered increased FAA surveillance of commuter air carrier operations to assure compliance with the Federal Aviation Regulations;

3. Instructed FAA enforcement personnel to take strict enforcement actions, including the citing of larger civil penalties for serious violations of safety regulations, with emphasis on air carrier violations, especially commuter air carriers;
4. Ordered the drafting and issuance of a new FAA enforcement handbook which would replace four separate compliance and enforcement handbooks, to establish uniform policy and procedural guidance for all agency enforcement personnel;
5. Recommended the enactment of new legislation for amending the Federal Aviation Act to increase the maximum civil penalty from \$1,000 to \$25,000 for each violation of the Act or the Federal Aviation Regulations and to provide criminal penalties for willful violations; and
6. Ordered extensive modernization, expansion, and improvement of the FAA computerized enforcement information system in order that the results of FAA enforcement actions, and their impact on aviation safety, may be better evaluated.

#### H. EXAMPLES OF ENFORCEMENT.

Pursuant to the Administrator's new enforcement program, FAA has instituted stringent actions against air carriers involved in serious safety violations. For example, enforcement actions of this type which have been completed include:

<u>Air Carrier</u>	<u>Penalty</u>
American Airlines	\$500,000 civil penalty
Continental Airlines	\$100,000 civil penalty
Talkeetna Air Taxi	Revoked Operating Certificate
Rapid Air	Revoked Operating Certificate
International Aviation	Revoked Operating Certificate
Wyoming Airlines, Ltd.	Revoked Operating Certificate
Red Carpet Airlines	Suspended Operating Certificate
Horizon Air Service	Suspended Operating Certificate
Skyway Aviation, Inc.	Suspended Operating Certificate
Valley Helicopter Service	Suspended Operating Certificate
Anchorage Air Service	Suspended Operating Certificate
Prinair	Suspended Operating Certificate

Other significant cases in which initial enforcement actions have been taken for violations of safety regulations involve sanctions ranging from suspension of commuter air carriers' operating certificates to substantial civil penalties against other air carriers. Such cases include initial civil penalty actions, for the amounts indicated, against the following:

Braniff Airways, Inc.	-	\$1,500,000
Pacific Southwest Airlines	-	385,000
Catalina Airlines, Inc.	-	200,000
Mexicana Airlines	-	100,000

## I. COMPREHENSIVE PROGRAM OF CONTINUED MONITORING OF PART 135 OPERATIONS.

On April 25, 1979, the FAA issued DOT/FAA Notice 8000.176 which put in place a comprehensive series of steps calling for increased surveillance and other steps for operations under new Part 135. Spot inspections of all Part 135 operators are included in the program. The objectives are to reduce commuter accidents and increase operator awareness of the stringent new requirements of Part 135. Some statistics illustrate the stepped-up surveillance. In FY 1978, before enactment of the Deregulation Act, approximately 239 inspector-years were spent in surveillance of commuters/air taxis by FAA's 975 General Aviation field office inspectors, accounting for approximately 25% of the total technical staff time. In FY 1979, our field office staff numbered 978. Approximately 492 inspector-years, an increase of 153 inspector-years over the 1978 level, were devoted to recertification and surveillance of commuters/air taxis. Thus, about 50% of the total technical staff time was spent on these activities. FAA regions now report that almost 50% of the journeyman-level inspectors are required, on a continuing basis, to meet the stepped-up surveillance program. In this interim period, and in order to meet these surveillance requirements, other safety programs have been given less attention. The Administrator is now providing 50 additional positions to the field offices in FY 1980 to support these other safety programs and intends to provide an additional 104 positions in FY 1981 if the FAA's budget request for 127 regulatory positions is approved.

## J. INVESTIGATION OF DC-10 AIRWORTHINESS.

As the result of the American Airlines DC-10 crash at Chicago on May 25, 1979, the FAA, through a combination of mandatory inspection requirements and suspension of the DC-10 type certificate, grounded the airplane from May 29 until July 13, 1979. This action, which has no precedent in the history of aviation, shows the deep concern of the FAA for the safety of the public. In making this decision, the FAA was mindful of the dictate from Congress to maintain the highest level of safety in air carrier service. The suspension of the type certificate was followed by the most intensive, sweeping safety investigation in history in which the airworthiness of the DC-10 was validated before resumption of operation of the airplane was permitted. As a result of facts developed during the investigation, American Airlines paid a compromise civil penalty of \$500,000 for maintenance defects, Continental Airlines paid a compromise civil penalty of \$100,000 for maintenance defects, and McDonnell Douglas Corporation paid a compromise civil penalty of \$300,000 for quality control defects.

## K. SAFETY IN AIRLINE MERGERS.

Subsequent to the effective date of the Deregulation Act, there have been two major mergers. The Southern Airways - North Central Airlines merger became effective on July 1, 1979. The FAA monitored this merger and it was accomplished with no adverse safety

consequences. The merger of National Airlines into Pan American World Airways became effective on January 19, 1980. An FAA team is monitoring this merger closely to ensure that there is no diminution in safety.

L. INCREASES IN STAFFING.

In 1979, the Congress recommended that 36 additional Flight Standards personnel be authorized for the FAA. In its FY 1981 budget request the FAA is seeking 127 additional positions over and above the additions authorized by Congress. These positions are necessary because the Deregulation Act has resulted in the diversion of a large part of the general aviation work force to air taxi and commuter airline activities to ensure that all classes of air carriers are providing the highest possible level of safe, reliable air transportation.

With respect to air traffic controllers in FY 1980, the agency obtained a net increase of 145 controllers over FY 1979. In the FY 1981 budget request, the agency has requested a net increase of 156 controllers over the FY 1980 figure.

M. SYSTEM FOR IDENTIFICATION OF SAFETY HAZARDS.

The FAA and the Transportation Systems Center are engaged in an ongoing program to improve the utilization of data base information and predictive analytic techniques to support safety and regulatory activity. Long-range planning, achievement of program objectives, and effective progress monitoring are integral program elements. The system provides a high degree of management awareness of overall safety improvement efforts. It will provide direct, prompt assistance to FAA field inspectors in solving safety problems encountered in administration and enforcement of the regulations.

N. SATELLITE AIRPORT DEVELOPMENT.

Recognizing the system's growth associated with deregulation, particularly at major hubs, in August 1979 the Administrator announced a major new program to upgrade air safety by improving satellite airports in 56 metropolitan areas. The purpose of the \$100 million 4-year program is to relieve congestion and reduce the mix of commercial and non-commercial aircraft at major hub airports by making neighboring satellite fields more attractive to private and business flyers. By November, the FAA had allocated \$64.6 million during FY 1979 for 109 projects at 92 satellite airports in 50 metropolitan areas. A second phase of the program is planned which could ultimately funnel funds to as many as 236 facilities identified by the agency as satellite airports.

The satellite airport program does not mean that the agency is neglecting development of general aviation airports located outside metropolitan areas. This is evidenced by the fact that FAA allocated \$63.9 million during FY 1979 for general aviation airports in smaller communities as compared with the \$64.6 million for the satellites.

O. PART 125 - NOTICE OF PROPOSED RULEMAKING

On November 9, 1979, the FAA issued a proposal for a new part to upgrade the regulation of certain large general aviation airplanes and replace commercial operator air travel club regulations. The proposal would govern large airplanes other than when engaged by U.S. operators in common carriage and would include operators of airplanes by lease and aviation service firms, airplane manufacturers with airplanes listed in the general aviation category, air travel clubs, corporations for company transport, and air carriers conducting non-revenue operations. The proposal is consistent with economic deregulation because it would apply a single set of rules to certain large airplanes without distinction based on economic aspects of the operation except common carriage would not be permitted.

P. AVIATION SAFETY REPORTING PROGRAM

The Aviation Safety Reporting Program (ASRP), initiated in April 1975, has been continued in a modified form effective July 1, 1979, to encourage the filing of reports with NASA concerning incidents or occurrences involving violations of the Federal Aviation Regulations. The modification also encourages improved compliance disposition among users of the National Aviation System.

Q. COMMUTER SAFETY SYMPOSIA.

Another of the FAA's innovations in the continuing effort to improve the safety of commuter operations is a program for a series of annual national commuter safety symposiums supplemented by regional symposiums. The purpose of the program is to provide opportunity for a continuing dialog on safety matters among the FAA, commuters, pilots, consumers, the Congress, and all other persons wanting to contribute ideas to the search for improved safety.

## EXECUTIVE SUMMARY

This report is being submitted to Congress and the Civil Aeronautics Board in response to the requirements of Section 107(b) and (c) of the Airline Deregulation Act of 1978. This section of the Act requires an analysis of the effects of deregulation, in the preceding calendar year, in terms of accidents, incidents and violations filed, current and anticipated staffing requirements, changes of air carrier operating practices and procedures, and the adequacy of the air safety regulations. Recommendations are also required for the levels of surveillance and levels of staffing necessary to perform this surveillance.

### GENERAL IMPACT OF THE ACT (CHAPTER II)

1. Although overall service is up, trunk and local service airlines are dropping some less productive routes and cities in favor of longer routes and increased frequencies between the more productive cities. The net result has been longer stage lengths. (There is a direct positive correlation between longer stage lengths and safety statistics.)
2. There was a dramatic increase in commuter airline operations which is reflected in flight hours, flights scheduled, and city pairs served.

### EFFECT OF THE ACT ON AIR SAFETY (CHAPTER III)

1. There is no evidence that deregulation has caused an increase in the accident rates of the air carriers.
2. The accident rates for certificated route carriers closely parallel those of previous years, except for the fatality numbers and rate resulting primarily from two major accidents.
3. Among those carriers engaged primarily in extensive domestic passenger service in the contiguous United States, the best statistical safety record per flight hour was compiled by the trunk air carriers, followed by the local service carriers, then the commuter carriers.
4. The commuter airlines experienced one of their highest traffic growth rates in 1979 as a result of the stimulus provided by deregulation but their accident and fatal accident rates remained comparably similar to the past 4 years of reported data.

5. For commuter airlines engaged in passenger service, the larger operators (those with flight hours of 8,500+ in the first 9 months of 1979) had accident, incident, and violation rates similar to those experienced by the local service airlines. However, the smaller commuter operators experienced rates significantly exceeding those of both the larger commuter operators and the local service airlines.
6. During the first 9 months of 1979, the new commuter airlines, and those which expanded rapidly in calendar year 1979, experienced accident rates lower than the operators which were conservative in their expansion. In the last 3 months of 1979, a trend of accidents began to emerge among the operators which were expanding at a rate greater than 25%.
7. Overall, commuter air carriers engaged in passenger service have substantially lower accident, incident, and violation rates than those conducting cargo/mail only operations.

#### EFFECT OF THE ACT ON AIR CARRIER OPERATING PROCEDURES AND AIR SAFETY REGULATIONS (CHAPTER IV)

1. No significant changes or proposals for changes in operating practices or procedures were submitted by the air carriers as a result of the implementation of deregulation in calendar year 1979.
2. Based on the operational experience thus far, the FAA has not identified a need to require significant changes to air carrier operating practices and procedures as a result of deregulation.
3. The FAA is processing some proposals for change to the air safety regulations as a result of deregulation; however, the operational experience of the industry in the deregulated environment is not yet sufficient to identify areas where further regulatory change may be necessary.

#### RECOMMENDATIONS FOR LEVELS OF SURVEILLANCE AND STAFFING (CHAPTER V)

1. The mandatory FAA surveillance program (see Appendix 1) for commuter airlines and air taxis should be continued through December 31, 1980, with special emphasis to the smaller commutes.
2. The FAA policies for national application in the ongoing air carrier surveillance program (see Appendix 2) should be continued for all other air carriers with special emphasis to the new local service carriers and other carriers which are expanding under the new economic options.

3. As soon as administratively possible, 50 additional Flight Standards regulatory positions will be assigned to the field offices in FY-1980. These positions will be taken from other FAA programs.
4. By 1981, a net increase of 154 Flight Standards regulatory positions should be assigned to the field offices. (This figure includes the 50 positions assigned in 1980.) Of these positions, 27 will be taken from FAA sources and 127 will be requested in the 1981 budget submission to Congress.
5. The effectiveness of FAA surveillance would be materially enhanced by congressional enactment of the proposed increase in the FAA's civil penalty authority up to 25,000 dollars and the addition of criminal penalties for certain limited offenses.

## CHAPTER I

### THE REPORT

#### A. PURPOSE OF THIS REPORT

This report is being submitted to Congress and the Civil Aeronautics Board in response to Section 107(b) and 107(c) of the Airline Deregulation Act of 1978 (P.L. 95-504) to meet the Act's requirement for Calendar Year 1979. These sections require the submission of an annual report on the extent to which implementation of the Act has affected the level of air safety in the preceding calendar year and the submission of recommendations for levels of surveillance and staffing for the following year.

#### B. ANALYSIS REQUIRED IN THIS REPORT

1. The Act requires that this report contain, at a minimum, an analysis of:

- a. All relevant data on accidents and incidents occurring in the preceding calendar year in air transportation and on violations of safety regulations issued by the Secretary of Transportation in that year (107(b)(1)).

This analysis is provided in Chapter III.

- b. Current and anticipated personnel requirements of the Administrator of the Federal Aviation Administration with respect to enforcement of air safety regulations (107(b)(2)).

This analysis is provided in Chapter V.

- c. Effects on current levels of air safety of changes or proposals for changes in air carrier operating practices and procedures which occurred during the calendar year covered by this report (107(b)(3)).

This analysis is contained in Chapter IV.

- d. The adequacy of air safety regulations, taking into consideration changes in air carrier operating practices and procedures which occurred during the calendar year, covered by such a report (107(b)(4)).

This analysis is also contained in Chapter IV.

2. Section 107(c) of the Act also requires, on an annual basis, recommendations with respect to the:

- a. Level of surveillance necessary to enforce air safety regulations (107(c)).

b. Level of staffing necessary to carry out such surveillance (107(c)).

These recommendations are included in Chapter V.

C. ASSUMPTIONS MADE IN THIS REPORT

The following assumptions were made in order to provide a basis for the groupings, statistical comparisons, and findings contained in this report:

1. The level of air safety attained in calendar year 1978, the year the Act became law, is used as the standard for comparison and evaluation of the 1979 safety statistics. Section 107(a) of the Act states that the Congress intends that the implementation of the Act result in no diminution of the high standard of safety in air transportation attained in the United States at the TIME OF ENACTMENT of the Act.
2. Any adverse affects of deregulation will first appear among the air carriers engaged in extensive passenger service in the contiguous United States. The carriers which fall in this criteria are the trunk, local service, and commuter airlines. These carriers have the most opportunities, i.e., markets, resources, etc., to expand under the new economic options provided by the Act.
3. If an air carrier had increases in flight hours and other operational data greater than the rates experienced by the industry in recent years, these increases were a direct result of deregulation.
4. Adverse effects of this expansion could show up anywhere in a carrier's system. Based on this assumption, all statistical data for occurrences on these carriers' international routes are also included in the statistical analysis.
5. The primary consideration of the Act's policy regarding air safety is the maintenance of a high level of safety for the traveling public. Based on this assumption, and because the overwhelming majority of passengers are carried by the trunk, local service, and commuter air carriers, special emphasis is not given to the other types of operators, i.e., all-cargo, charter, etc.; however, their accident records are reviewed in this report.

D. ASSOCIATED GOVERNMENT AGENCIES

The Governmental agencies referenced in this report and their responsibilities with respect to air safety are:

1. Department of Transportation (DOT) - An executive department of the U.S. Government established by the Department of Transportation Act of 1966 (80 stat. 931) for the purpose of

developing national transportation policies and programs conducive to the provision of fast, SAFE, efficient and convenient transportation of the lowest cost consistent therewith.

2. Federal Aviation Administration (FAA) - A part of the Department of Transportation; the FAA is charged with: REGULATING AIR COMMERCE TO PROMOTE ITS SAFETY AND DEVELOPMENT; achieving the efficient use of the navigable airspace of the United States; promoting, encouraging, and developing civil aviation; developing and operating a common system of air traffic control and air navigation for both civilian and military aircraft; and promoting the development of a national system of airports.
3. Civil Aeronautics Board (CAB) - An independent U.S. Government agency established under the Civil Aeronautics Act of 1938 (52 stat. 973) which has broad responsibility for the encouragement and development of an air transportation system properly adapted to the present and future needs of the foreign and domestic commerce of the United States, of the Postal Service, and National defense. It is vested with ECONOMIC REGULATORY POWERS over civil aviation within the United States, and between the United States and foreign countries. Among its powers, the Board issues certificates of public convenience and necessity to air carriers and has jurisdiction over the tariffs for air transportation.
4. National Transportation Safety Board (NTSB) - An autonomous agency, established as such in 1975 by the Independent Safety Board Act. The Board seeks to promote transportation safety by conducting independent accident investigations and MAKING SAFETY IMPROVEMENT RECOMMENDATIONS to government agencies, the transportation industry, and others on safety measures and practices.

#### E. DEFINITIONS OF TERMS USED IN THIS REPORT

For the purpose of this report, the following definitions will apply:

1. Operator - A person holding a certificate authorizing the transportation of passengers and/or cargo for compensation or hire.
2. Air Carrier (Airline) - Any person who undertakes, whether directly or indirectly, or by a lease or any other arrangement, to engage in air transportation. (Air transportation is defined as interstate common carriage of persons and/or property.)
3. Certificated Route Air Carriers - A group of air carriers holding , certificates of public convenience and necessity issued by the CAB authorizing the performance of scheduled air transportation over specified routes and a limited amount of nonscheduled operations (for the purpose of this report, all-cargo carriers are excluded from this grouping). Certificated route air carriers are often referred to as "scheduled carriers" even though they also perform nonscheduled services.

4. Trunk Air Carriers - A class of certificated route air carriers holding original certification under the Civil Aeronautics Act of 1938 and whose primary operations are in domestic scheduled passenger service between medium and large air traffic hubs. The trunks included in this report are: American, Braniff, Continental, Delta, Eastern, National, Northwest, TransWorld, United, and Western Airlines. (Although Pan American is included as a trunk air carrier in CAB statistical data, it is not included as a trunk in the statistical tables in this report because its routes are primarily international and its present stage lengths are double those of the other trunks.)
5. Local Service Air Carrier - A class of certificated route air carriers originally established in the late 1940's to foster and provide air service to small and medium communities on relatively low density routes to large air traffic hubs. The original local service airlines included in this report are: U.S. Air (Allegheny), Hughes Air West, Frontier, Ozark, Piedmont, Republic (merger between Southern and North Central Airlines), and Texas International. The other certificated route carriers which conduct scheduled passenger service are: Air California, Air New England, Air Florida, Air Wisconsin, Aspen Airways, Mackey International, Pacific Southwest, Southwest, and Wright Airlines. For the purpose of this report these carriers are included in the local service airline accident statistics on Tables 3-2 and 3-6 and are presented in comparison with the original local service carriers on Table 3-7.
6. International and Territorial Air Carrier - In the strictest sense, a certificated route air carrier conducting international and territorial operations only. For this report, Pan American and Alaska Airlines are the carriers which fall within this category. This grouping, and those shown in paragraph 8 and 9, were used in past accident reports because the type of operation has some unique characteristics which could distort the accident statistics of other carrier groupings.
7. Alaska and Hawaii Air Carriers - Certificated route air carriers conducting operations primarily within the States of Alaska or Hawaii. These carriers are: Aloha Airlines, Hawaii Airlines, Reeve Aleutian Airways, and Wien Air Alaska.
8. Helicopter Air Carriers - Certificated domestic route air carriers employing helicopter aircraft for their primary operations. Only one, New York Airways, is presently conducting scheduled operations.
9. Air Taxi - A class of air carriers, operating pursuant to CAB Part 298, engaged in air transportation of persons, property, or mail for compensation or hire in small aircraft. Part 298 defines "small aircraft" as those with passenger capacities of 60 or less

and payload capacities of 18,000 pounds or less. They do not hold certificates of public convenience and necessity and do not hold specific route authority.

10. Commuter Air Carrier - An operator, under CAB Part 298, which (1) performs at least five round trips per week between two or more points using small aircraft and publishes flight schedules which specify the times, days of the week, and places between which such flights are performed, or (2) transports mail by air pursuant to a current contract with the United States Postal Service.
11. Scheduled All Cargo Air Carrier - A class of certificated air carriers holding Certificates of Public Convenience and Necessity, authorizing the performance of scheduled air freight, express and mail transportation over specified routes, as well as the conduct of nonscheduled operations which may include passenger operations.
12. All Cargo Air Service (418 Operator) - A person who holds an all-cargo certificate issued under Section 418 of the Federal Aviation Act for the carriage of only property as a common carrier for compensation or hire between places in any state of the United States, Puerto Rico, or the Virgin Islands in large aircraft. The primary difference between the 418 operator and the Scheduled All-Cargo air carrier is the 418 operator does not hold certificated route authority and, therefore, does not have route protection from the CAB.
13. Charter (Supplemental) Air Carrier - An air carrier holding a certificate authorizing it to conduct charter flights. As a result of the Airline Deregulation Act, some of these operators, with CAB authorization, have instituted limited scheduled services.
14. Commercial Operator - A person who, for compensation or hire, engages in carriage of passengers and/or property without CAB economic authority. Such persons may operate as a common carrier (publicly advertise its services for hire) intrastate or as a private carrier (for selected customers on contract basis) interstate.

#### E. SOURCES OF DATA CONTAINED IN THIS REPORT

1. Flight Hour Information - The flight hours for the trunk and local service airlines were taken from the FAA Propulsion Reliability Report and are current through September 30, 1979. The 1978 commuter flight hours were taken from CAB data. The '79 commuter flight hours were reported by the FAA regions and include all flight hours through September 30, 1979. It does not include the hours of any commuter that went out of business between January 1 and September 30, 1979.

2. Schedule Information - The comparison of scheduled flights and scheduled miles (Table 2-1) was taken from the Official Airline Guide for the first week of September 1978 and 1979.
3. Accident Information - The accident data was taken from FAA accident information. Commuter accident breakdowns, i.e., commuter vs. on-demand operation, passenger vs. cargo, accident vs. incident, were established by surveying the FAA regions and comparing with NTSB records. In those cases where FAA and NTSB records differed, the NTSB breakdown was used.
4. Incident and Violation Information - The incidents and violations filed were reported by the FAA regions and are current through October 1, 1979. While the incident and violation totals and rates from 1978 were available, they were not subdivided by carrier and are not included where data for specific carriers was necessary for comparison.

## CHAPTER II

### Changes to the Air Carrier Operating Environment

The Airline Deregulation Act gives air carriers certain operational and economic options that were heretofore selectively controlled by the Civil Aeronautics Board. This chapter reviews these options, the safety considerations, and selected statistical data to assess the general impact of the Act on the air carrier industry thus far and provide a background for objective analysis of the accident, incident, and violations filed in Chapter III.

#### A. SUMMARY OF FINDINGS

1. Although overall service is up, trunk and local service airlines are dropping some less productive routes and cities in favor of longer routes and increased frequencies between the more productive cities. The net result has been longer stage lengths. (There is a direct positive correlation between longer stage lengths and safety statistics.)
2. There was a dramatic increase in commuter airline operations which is reflected in flight hours, flights scheduled, and city pairs served.

#### B. OPERATIONAL & ECONOMIC OPTIONS

When considering the new operational and economic options presented in this section, one should be aware that these options have not, in any way, lessened the air carriers' responsibility to meet the requirements of the air safety regulations. There were no reductions in the minimum standards of these regulations as a result of deregulation. In some cases, consideration is being given to raising these standards.

The Act generally increases the freedom of air carriers to acquire new routes, terminate existing routes, and set fares. It provides for gradual decontrol of routes between October 1978 and January 1982. It also provides for the deregulation of fares by 1983 and for consideration of complete elimination of CAB control by 1985.

During the period prior to 1982, carriers are permitted to acquire new routes by any of three methods. First, the Act permits an airline to claim a route previously authorized to another airline but not currently operated by it. This is the "dormant route" authority. Second, the "automatic market entry" provision of the Act permits an airline to claim one new route each year for 3 years, even though that route is not dormant. (An airline may protect one market per

TABLE 2-1  
CHANGES TO AIR CARRIER OPERATING ENVIRONMENT

		<u>Flight Hours (3)</u>	<u>% Chg.</u>	<u>Flights Scheduled(4)</u>	<u>% Chg.</u>	<u>Miles(4)</u>	<u>% Chg.</u>	<u>Stage Length</u>	<u>% Chg.</u>	<u>City Pairs</u>	<u>% Chg.</u>
Trunk	1978	4,618,798		59,399		36,275k		610			
	1979	4,817,951	+ 4	58,593	- 1	38,325k	+ 5	654	+ 7	- 1	
Local Service (1)	1978	1,041,549		29,758		6,383k		214			
	1979	1,179,723	+13	28,443	- 5	7,359k	+15	258	+21	-2	
Commuter (2)	1978	404,165		12,422		1,221k					
	1979	529,641	+31	16,046	+29	1,703k	+39	98	+ 8	+15	

NOTE: 1. Only original 8 local service carriers included in this table.

2. Only 49 commuters included. Lack of sufficient data for other commuters prevented their inclusion.

3. 1979 flight hours projected from information available through September 30, 1979.

4. Comparisons of weekly data available in the Official Airline Guide September 1978 vs. September 1979.

SOURCES: Trunk and local flight hours - FAA Propulsion Reports

Commuter flight hours - CAB reports (1978) vs. FAA regional reports (October 1979)

Flights scheduled, miles scheduled and stage lengths based on Official Airline Guide (First week of September 1978 vs. 1979)  
City Pairs - FAA regional reports (October 1979)

year from entry by a competitor). Third, the Act grants expanded authority to the CAB to authorize new routes with a minimum of procedural delay and with a minimum of opportunity for other airlines to resist or refute the need for more competition. Collectively, these provisions of the Act have made new airline routes easier to obtain.

The Act also enables carriers to discontinue service on 90 days' notice if a city is served by one or more other airlines. If the city has no other airline, the airline seeking to suspend service may be required to continue service until the CAB approves a replacement airline to provide "essential" air transportation. The Act provides for the CAB to pay a subsidy, if necessary, to induce replacement service.

The Act has also increased the flexibility of airlines in setting fares. Carriers are permitted to offer reductions of up to 50 percent and increases of up to 5 percent with respect to the CAB's "standard industry fare level" without prior CAB approval. Under the Act, all CAB regulations of domestic fares are scheduled to end January 1, 1983.

The Act includes an exemption for air taxi and commuters to use larger aircraft. Prior to deregulation, commuters were limited to aircraft with a maximum passenger capacity of 30 and payloads of 7,500 pounds or less, unless they made application to the CAB for a special exemption. Now a "blanket" exemption allows commuters to operate aircraft with capacities of 60 passengers or less and 18,000 pounds payload or less without obtaining special exemption from the CAB. This gives a commuter airline more flexibility in its selection of aircraft and any new operator of such aircraft may conduct scheduled commuter service after meeting the applicable requirements of the Federal Aviation Regulations without obtaining specific CAB authority.

Other provisions of the Act which will have a positive effect on the rate of growth of commuter airlines include (1) making commuter airlines eligible for loan guarantees to buy aircraft, (2) requiring their inclusion in joint fare agreements, and (3) giving the CAB authority to award direct subsidies to commuter airlines for providing essential air service.

#### C. GENERAL IMPACT: AIR SERVICE

A restructuring of the air service in the United States is occurring. Air carriers operating large jet aircraft are using these aircraft on longer stage lengths and more dense routes. Those air carriers which operate aircraft better suited for short stage lengths are providing service to the smaller passenger markets. According to the CAB, no community lost scheduled air service in 1979; in some cases the number of points served, daily departures, and available passenger seats per community has increased.

#### D. GENERAL IMPACT: TRUNK AIR CARRIERS

According to the available operational data, the trunk air carrier industry took advantage of the new operational and economic opportunities available under the Airline Deregulation Act. New routes were applied for and granted, and innovative as well as lower fares were offered to the public. Because of the opportunities made available, some of the trunks were able to expand operations at a greater rate than in past years. Other trunks expanded operations at a rate lower than past years for various reasons, including aircraft and fuel shortages, as well as labor disputes. The trunk air carrier industry is in the process of realigning its route system in favor of longer and more dense routes, as indicated by the significant increase in stage lengths (distance from takeoff to landing) and total scheduled miles. (See Table 2-1)

#### E. GENERAL IMPACT - LOCAL AIR CARRIERS

There were a number of changes to this group in 1979 that were directly attributable to deregulation. The group increased from the original 8 to 18 by the end of the year. Within the original group, Southern and North Central merged as Republic Airlines. Three carriers with limited certificated routes, Air New England, Aspen Airways, and Wright Airlines now have authority to expand their certificated routes as a result of deregulation. Four commercial operators, previously conducting scheduled intrastate flights, Air California, Air Florida, Pacific Southwest, and Southwest, became certificated route carriers. This move gave them the option of conducting scheduled interstate flights. Two commuter airlines, Air Wisconsin and Mackey International Airlines also became certificated route carriers, which gave them the option of using aircraft with passenger carrying capability of more than 60 passengers and payloads greater than 18,000 pounds. Air Pacific and Midway Airlines also began operations in late 1979.

The data for the original group of local air carriers shows trends similar to, but more pronounced than that of the trunks. The stage lengths and scheduled miles increased much more significantly (21% and 15% respectively) while the total flights scheduled decreased by 5%. (See Table 2-1). As with the trunks, it appears that these operators, as a group, are dropping their less productive routes and cities in favor of longer routes and more productive cities.

#### F. GENERAL IMPACT - COMMUTER AIRLINES

The commuter airlines providing passenger service experienced dramatic increases in several categories in 1979. A selective sample of data available on 49 commuter airlines in passenger service who published their schedules in 1978 and 1979 shows that total flight hours have increased by 31%, scheduled flights by 29%, scheduled miles by 39%,

and city pairs served by 15% (Table 2-1). By contrast, the rates for these categories in the past 10 years have averaged 5 to 10% per year. The CAB reports for the 12 months ended June 30, 1979, show that the commuter airlines scheduled passenger traffic increased 13.9%, scheduled cargo increased 18.1%, while mail decreased 47.4% for the previous year.

As of October 1, 1979, there were 262 FAA-certificated commuters providing passenger service and 44 providing cargo and mail services only. Those providing passenger service had flown 1,258,480 flight hours for the year as of that date. Assuming a straight line increase in flight hours for the full year, they will have flown 1,677,973 hours by December 31, 1979. The cargo and mail only commuters reported 113,938 flight hours as of October 1; this projects to 151,917 hours for calendar year 1979.

By contrast, 220 commuters providing passenger service and 60 cargo/mail only operators reported to the CAB in 1978; however, comparisons between the 2 years of data are not possible because approximately 71 of the commuters failed to report to the CAB in 1978, and thus, much 1978 data is not available for comparison. It also appears from consolidation of the CAB and FAA information that there were 351 commuters in 1978. This would indicate that there has been a net loss of 45 commuter airlines between December 31, 1978, and October 1, 1979.

#### G. GENERAL IMPACT - AIR TAXI

By December 1, 1979, there were 3,535 FAA-certificated air taxis. Their total estimated 1979 flight hours were 3,898,573. This figure is based on a FAA survey as of October 1, 1979, and a straight line projection of the flight hours. By contrast, there were 4,220 air taxi operators on December 31, 1978; thus, there was a net loss of 685 air taxis between December 31, 1978, and December 1, 1979. The FAA estimated the 1978 air taxi flight hours as 3,945,480. Because this figure includes the commuter flight hours and the 1979 figures exclude them, no determination of the actual 1979 increase in flight hours is made in this report; however, preliminary indications are that the increase will exceed 15%.

#### H. IMPACT ON AVIATION SECURITY

The 1979 changes in the number of air carriers and the airports they serve have had an impact on FAA's Civil Aviation Security Program. As of November 1, 1979, there have been seven new entrants into scheduled domestic passenger markets. Additionally, 32 carriers have been granted modification to their authority which has resulted in service to 364 new points (as of July 1, 1979). Because the airlines are also dropping some routes, the net result of these and other CAB actions is 134 new passenger screening stations. These figures do not include all points authorized by CAB because some are served by carriers not required by Federal Aviation Regulations to screen passengers.

## CHAPTER III

### REVIEW OF ACCIDENT, INCIDENT AND VIOLATION STATISTICAL INFORMATION FOR THE AIR CARRIERS

Section 107 of the Airline Deregulation Act of 1978 requires an analysis of all relevant data on accidents and incidents occurring in the previous calendar year, and the violations of safety regulations issued during that period, to determine the extent to which the implementation of the Act has affected air safety. This chapter reviews the 1979 air carrier data regarding accidents, incidents, and violations with some comparisons to 1978 data. THE EMPHASIS OF THE COMPARATIVE DATA IS FOCUSED ON THOSE CARRIERS EXTENSIVELY INVOLVED IN SCHEDULED DOMESTIC PASSENGER SERVICE IN THE CONTIGUOUS UNITED STATES because the available resources and markets provide much more potential for change among these carriers.

#### A. SUMMARY OF FINDINGS

1. There is no evidence that deregulation has caused an increase in the accident rates of the air carriers.
2. The accident rates for certificated route carriers closely parallel those of previous years, except for the fatality numbers and rate resulting primarily from two major accidents.
3. Among those carriers engaged primarily in extensive domestic passenger service in the contiguous United States, the best statistical safety record per flight hour was compiled by the trunk air carriers, followed by the local service carriers, then the commuter carriers.
4. The commuter airlines experienced one of their highest traffic growth rates in 1979 as a result of the stimulus provided by deregulation but their accident and fatal accident rates remained comparably similar to the past 4 years of reported data.
5. For commuter airlines engaged in passenger service, the larger operators (those with flight hours of 8,500+ in the first 9 months of 1979) had accident, incident, and violation rates similar to those experienced by the local service airlines. However, the smaller commuter operators experienced rates significantly exceeding those of both the larger commuter operators and the local service airlines.

6. During the first 9 months of 1979, the new commuter airlines, and those which expanded rapidly in calendar year 1979, experienced accident rates lower than the operators which were conservative in their expansion. In the last 3 months of 1979, a trend of accidents began to emerge among the operators which were expanding at a rate greater than 25%.
7. Overall, commuter air carriers engaged in passenger service have substantially lower accident, incident, and violation rates than those conducting cargo/mail only operations.

#### B. DEFINITIONS OF TERMS USED IN THIS CHAPTER

1. Aircraft Accident: An "aircraft accident" is defined by the National Transportation Safety Board (NTSB) as "an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until all such persons have disembarked, and in which any person suffers death or serious injury as a result of being in or upon the aircraft or by direct contact with the aircraft or anything attached thereto, or in which the aircraft receives substantial damage."
2. Aircraft Incident: An "aircraft incident" is defined by the Federal Aviation Administration as "an aircraft occurrence, not classified as an accident, in which a hazard or potential hazard to safety is involved. It is important to note that many of the incidents have no identifiable operational factors involved, but are found in routine maintenance and airworthiness inspections. Most incident information is forwarded by the operator to the FAA for analysis, however, the NTSB does specify 11 types of incidents which must also be reported to them."
3. Violation: For the purpose of this report, a violation is "an official report filed by a FAA Aviation Safety Inspector, which alleges that an operator has failed to comply with one or more requirements of the air safety regulations." The numbers included in the tables associated with this chapter represent all investigation reports filed by field offices. The reports, when processed, include administrative enforcement actions, legal enforcement actions (civil penalty or certificate action), and cases closed without action. The inclusion of all reports filed, rather than just those on which action was taken, was necessary to provide calendar year data because the processing for some reports require extensive time periods.

#### C. BASIS FOR COMPARISONS

1. Comparisons will be made in the statistical data using the following numbers and rates:

Total Flying Hours  
Number of Accidents  
Rate of Accident Occurrence

Number of Fatal Accidents  
Rate of Fatal Accident Occurrence  
Number of Fatalities in these Accidents  
Rate of Fatality Occurrence  
Number of Incidents  
Rate of Incident Occurrence  
Number of Violations Filed  
Rate of Violation Occurrence

2. Total Flight Hours:

The total flight hours are the basis for establishing the rate of occurrence of the accident/incident data. The flight-hour totals in the tables were obtained through reports made by the operators to the Federal Aviation Administration and the Civil Aeronautics Board. Except where projected, 1979 flight-hour totals are those reported by the carriers through September 30, 1979. Projections of the annual flight hours for the commuter airlines were made on a straight line basis from information available on October 1, 1979. Projections of annual flight hours for the other carriers were made from the October 1, 1979 information, taking into account seasonal changes in operations.

3. Number of Accidents/Incidents/Violations Filed

The number and type of aircraft accidents were obtained from the records maintained by the National Transportation Safety Board (NTSB) and FAA. The number of incidents and violations filed were obtained from FAA. Because 1979 incidents and violation files were only available through October 1, they were not included in the statistical tables with the calendar year accident data.

4. Rate of Accident/Incident/Violations

The rates given for aircraft accidents and incidents are per 100,000 flight hours. This rate has historically been one method of calculating aircraft accident rates and provides a basis for comparison with previous years. Other rates, e.g., number of departures, number of revenue passenger miles, etc., were not used because the data base is not complete for all types of carriers.

The rate for violations filed is also calculated per 100,000 flight hours in order to make the comparisons required in this report. Prior to this report, the rate of violations included in published summaries was calculated and reported per 10,000 flight hours.

5. Limitations of Statistical Comparison of Accident, Incident, and Violations

When making statistical comparisons in the tables contained in this chapter, one should be aware that accidents, except in isolated cases, are randomly spread among the operators, and their rate of occurrence per operator and per given year is not reliably predictable.

The number of incidents and violations are not as absolute as the accident information. Many occurrences which fall under the general classification of an incident are dependent on the operator and his personnel making the proper reports. The actual follow through varies among the operators. Violations are dependent on a FAA Aviation Safety Inspector determining that an operator has not complied with air safety regulations. Also, one violation report at times may contain a number of violations.

D. EXPLANATION OF SPECIAL STATISTICAL COMPARISONS

1. Grouping of Trunk and Local Service Carriers  
(Tables 3-4, 3-5, 3-7 and 3-8)

The trunk and local carriers have been grouped according to their rate of expansion in 1979. The purpose of this grouping is to evaluate the accident, incident and violation information in relation to the carriers' expansion in 1979. The groupings used are: Group I - for those carriers which do not appear to have expanded their operations in 1979 as a result of deregulation (0 - 3% annual flight-hour increase). Group II - for those carriers whose expansion in 1979 appeared to be consistent with pre-deregulation expansion (4% - 8% annual flight-hour increase). Group III - for those carriers which appear to have expanded at a greater rate than in pre-deregulation years (9%+ annual flight-hour increase). Two other groups are included in the local service carrier statistical tables for better analysis: Group IV - previous commercial operators which operate large jet aircraft, now certified route carriers and Group V - previous commuter operators, now certificated route carriers. The primary indicator used to assign the groupings was the percent of increase in the flight hours. Other indicators, i.e., increases in aircraft fleet size, city pairs served, flights scheduled, and miles scheduled, etc., were also considered in assigning the groups. For the purpose of this report the groupings were:

- Group I Trans-World, United, Western, Hughes Air West, Ozark Airlines, and U.S. Air.
- Group II American, Delta, Eastern, National, and Piedmont Airlines.
- Group III Braniff, Continental, Northwest, Frontier, Republic, and Texas International Airlines.
- Group IV Air California, Air Florida, Pacific Southwest, and Southwest.
- Group V Air New England, Air Wisconsin, Aspen, Mackey International, and Wright Airlines.

2. Comparison of Commuters in Passenger Service vs. Cargo/Mail Only Commuters (Table 3-10)

This table provides a breakdown of the accidents, incidents and violations which occurred during, or were directly connected to, SCHEDULED PASSENGER SERVICE by commuter airlines. The table is based on the following assumptions:

- a. Accidents attributed to an operator were not included in this assessment if they could not clearly be connected to the actual commuter operation.

In the past, almost all accidents involving aircraft operated by companies who reported to the CAB that they conducted scheduled commuter flights were included in the FAA commuter accident data. This was based on an assumption that, like the other air carriers, all flight operations conducted by the carrier, i.e., training, ferry flights, chartered flights, etc., were interrelated with the overall air carrier operation. In the present environment, this is not necessarily a valid assumption for most operators of commuter airlines. Many of these companies engage in a wide variety of activities, e.g., rental of aircraft to pilots, on-demand air taxi services, flight training unrelated to commuter operations, providing pilot services, etc. The commuter operation may actually only be a very small portion of the overall company flight operations.

The use in the data base of all accidents involving aircraft of a general aviation company, without consideration of the nature of the particular operation, distorts commuter accident statistics. Actually, commuter operations should be statistically safer than many of the other operations listed in the previous paragraph because they are conducted (1) by pilots who meet the higher standards required by the FAA for air taxi/commuter flight crewmembers, (2) in aircraft also required to meet higher standards, (3) over familiar routes, (4) primarily into airports with good runway and approach facilities and (5) during daylight hours.

- b. The data presented should include all operators who hold an authorization to conduct commuter operations, not just those who have made quarterly reports to the Civil Aeronautics Board.

The data on Table 3-10 includes all commuter air carriers certificated by the FAA as of October 1, 1979. The totals in this table are different from those presented on Table 3-9, because those statistics include only those operators who have reported, on a quarterly basis, to the Civil Aeronautics Board. Traditionally, the FAA has used only these operators

when classifying commuter accidents and computing rates, however, due to the significant changes this year in the commuter industry and the time lag for reporting to the CAB, the FAA regions were requested to report the 1979 commuter flight-hour information through September 30, 1979, for all commuter airlines certificated as of October 1, 1979, in order to compile the accident statistics for 1979.

- c. In order to evaluate the safety of commuter airline passenger service, the cargo and mail only commuter operators must be separated from those conducting passenger and cargo service because their accident, incident, and violation action rates are significantly higher than those in passenger service.

In the past, commuter accident statistics have been reported as a single group. This practice distorts the commuter statistics if the objective of an analysis is to review the safety of commuter passenger service. Generally the majority of the cargo and mail only commuters use older aircraft, one pilot only (where possible), and their operations tend to be at night. All of these factors tend to contribute to a higher frequency of accidents among these operators. This tendency is supported by a review of Table 3-10. Tables 3-10 through 3-14 separate those operators conducting scheduled cargo and/or mail only operations from those providing scheduled passenger and cargo services in order to evaluate the safety of commuter airlines passenger service.

3. Grouping of Commuter Airlines By Hours Flown in 1979  
(Table 3-12 and 3-13)

The commuter airlines who conducted scheduled passenger service were grouped according to the number of flight hours flown in the first 9 months of 1979 to determine if there was a correlation between the extent of the operation and the carriers' accident, incident, and violation rate in 1979. The groupings were: Group I - 1 to 2,499 hours; Group II - 2,500 to 8,499 hours; Group III - 8,500 to 19,999 hours, Group IV - 20,000 or more hours.

5. Grouping of Commuter Airlines by Increase in Flight Hours 1978 vs.  
1979 (Table 3-14)

Commuters conducting scheduled passenger service were grouped according to their rate of expansion as indicated by a comparison of their 1978 flight hours and their projected 1979 flight hours to determine if there is an increase in accident, incidents, and violation rates among those commuters who expanded in 1979. The groupings were: Group I - No expansion, Group II - 1 to 25% increase in flight hours, Group III - 26 to 50%, Group IV - 51 to 100%, Group V - 101%+, Group VI - new operators, and those that could not be assigned to groups due to lack of 1978 flight-hour information.

## E. ANALYSIS OF STATISTICAL INFORMATION

### 1. Certificated Route Carriers

The 1979 accident totals and rates for certificated route carriers are running parallel to the pre-deregulation 1978 totals (Table 3-1). Only the fatality rate is higher and that was the result of two major accidents.

There were no fatal accidents in the International and Alaska/Hawaii carriers (Table 3-2). Therefore, no further consideration will be given these two groups in this report. The helicopter carrier, New York Airways, had a fatal accident; however, since helicopter safety problems are unique to that type of operation and this operator was unaffected by deregulation, it will also not be considered in this report.

### 2. Trunk Air Carriers

As a group, the trunk carriers are experiencing lower accident rates in 1979 than they did in 1975 through 1978 (Table 3-3). The high fatality totals and rates are the result of two major accidents.

A comparison of the trunk carriers (grouped by percentage of flight hours increased in 1979) does not indicate that a significant increase in the total flight hours flown by an air carrier has an adverse effect on the accident/incident/violation rates (Table 3-4). There was no tendency for the accidents, incidents, and violations to centralize in any one group. A comparison of the 1978 and 1979 accident data for these groups also does not show any identifiable trend which can be attributed to deregulation (Table 3-5).

### 3. Local Service Air Carriers

The 1979 accident totals and rates for the local service carriers are slightly higher than those experienced from 1975 to 1978 (Table 3-6). This increase is primarily a result of the infusion of the accident statistics from the nine other certificated route carriers included in the local service air carrier statistics this year (Table 3-7).

As in the statistics for the trunk carriers, the safety indicators (accident/incidents/violations) did not centralize in any one grouping of the local service air carriers (Table 3-7). The comparison of the local service carriers (grouped by percentage of flight hour increase) does show an apparent trend in the rate of accidents and violation occurrence among those carriers which had flight hour increases exceeding 9%; however, the incident rate for that group was less than half that of the group with the smallest

percentage of flight hour increase. The comparison of the 1978 and 1979 accident data for these groups show a random distribution of the accident data in both years with no identifiable trend which can be attributed to deregulation (Table 3-8).

The other two groups (Group IV and V) shown on Table 3-7 were included in the local service airline accident data for the first time in 1979 and are grouped separately in this table to show the effect of their data on the local service accident rates. The four carriers which were commercial operators in 1978 (Group IV) did not have accident/incident/violation rates significantly different from the original local service carriers. Those carriers which conduct primarily commuter airline-type operations (Group V) have higher rates than the other groups shown on this table. Their rates are more comparable to the commuter airline data shown on Table 3-11.

#### 4. Commuter Air Carriers

The total and fatal accident rates for those commuter airlines which reported to the CAB in 1979 are lower than they were in 1978, prior to deregulation (Table 3-9). These 1979 rates are very similar to the rates developed from a consolidation of the 1979 flight hours and accident data for all of the commuter airlines (both those that have reported to the CAB and those that have not) available through September 30, 1979 (Table 3-10).

Overall, commuter airlines providing passenger service have significantly lower accident, incident, and violation rates than the cargo/mail only commuters (Table 3-10). Their rates, however, are higher than the trunks and local service airlines (Table 3-11). There is a considerable difference between the rates of operators depending primarily on the amount of annual flight hours (Table 3-12). Operators with lower annual flight hours have the highest rates: in most cases, double those with flight hours of 8,500 and more. Those with the higher amounts of annual flight hours have rates similar to the local service airlines (Table 3-13).

The analysis of the effect of commuter airline expansion shows for the first 9 months that the expansion did not have a noticeable adverse affect on their accident, incident, and violation rates (Table 3-14). In fact, those operators who did not expand more than 25% in flight hours in 1979 have much higher rates than the other groupings considered in this analysis and the new operators have rates which compare favorably with the best group rates among the experienced commuters. During the last three months of 1979 all of the accidents but one occurred in those groups which were expanding greater than 25%. This trend appears to neutralize the findings of the first nine months.

#### 5. Calendar Year Comparisons

The calendar year comparisons show that no noticeable changes occurred to the accident data or the relationships of the carriers engaged in scheduled passenger service since October 1, 1979, with respect to their accident rates (Tables 3-15 and 3-16).

#### 6. Other Operators

The accident data for the other air carriers and certificated operators of large aircraft did not show any adverse changes resulting from deregulation (Table 3-17).

### F. AVIATION SECURITY

Hijackings are classified as successful, unsuccessful or incomplete. A successful hijacking occurs when the hijacker controls the flight and reaches his destination or objective. An unsuccessful hijacking occurs when the hijacker attempts to take control of the flight but fails. An incomplete hijacking occurs when the hijacker is apprehended or killed during the hijacking or as a result of "hot pursuit."

The following comparison of the 1978 and 1979 hijack information is provided:

#### 1. Trunk Air Carrier

During 1978, there were five attempts made to hijack trunk airline aircraft, 2 were unsuccessful and 3 were incomplete. By contrast, there were 10 attempts in 1979, 3 successful, 2 unsuccessful, and 5 were incomplete.

#### 2. Local Service Air Carrier

There were three attempts to hijack a local service airline aircraft in 1978, two were unsuccessful and one was incomplete. In 1979, there was one successful hijacking.

#### 3. Commuter Airline

There were no attempts to hijack a commuter airline aircraft in 1978 or 1979.

No hijack attempts during calendar year 1979 involved real firearms or high explosives.

COMMUTER ACCIDENTS - CERTIFICATED VS NON-CERTIFICATED AIRPORTS

In the first 9 months of 1979, there were 49 commuter accidents, all occurring during taxi, takeoff, departure, approach, and landing operations, which are closely associated with an airport and its navigational aids. Forty of those accidents, including six fatal, occurred on airports certificated under FAR 139 by the FAA. Ten, including one fatal, occurred at other locations (three during seaplane operations, four at Alaskan airports, and three on non-certificated airports in the contiguous United States).

STATISTICAL TABLES

OF

AIR CARRIER ACCIDENT, INCIDENT

AND VIOLATION

INFORMATION

TABLE: 3-1

TITLE: CERTIFICATED ROUTE CARRIERS

PURPOSE: Comparison of overall accident rates for certificated route carriers -  
1978 vs. 1979

OBSERVATION:

1. The accident rates for both years were statistically very small.
2. With exception of fatality rate for 1979, resulting from two major accidents, the 1979 rates were almost exactly the same as 1978.

TABLE 3-1  
CERTIFICATED ROUTE CARRIERS  
(1978 -1979)

	1978	1979	<u>Totals</u>
Number of Carriers	24	35	
Flight Hours	6,105,285	6,825,410*	
Accidents	22	24	
Accident Rate	0.36	0.35	
Fatal Accidents	5	5	
Fatal Accident Rate	0.08	0.07	
Fatalities	19	350	
Fatality Rate	0.31	5.13	

NOTE: 1. Rates Per 100,000 Flight Hours  
\*2. Flight Hours are estimated for Calendar Year 1979.

TABLE: 3-2  
TITLE: SUMMARY OF ALL CERTIFIED ROUTE CARRIERS  
PURPOSE: Comparison of 1979 accident rates for all categories of certificated route carriers.

TABLE 3-2  
SUMMARY OF ALL CERTIFICATED ROUTE CARRIERS  
(1979)

	<u>1979 Totals</u>	<u>Trunks</u>	<u>Locals</u>	<u>International</u>	<u>Helicopter</u>	<u>Alaska &amp; Hawaii</u>
Number of Carriers	35	10	18	2	1	4
Flight Hours	6,825,410*	5,013,466*	1,404,279*	337,801*	1,202*	68,662*
Accidents	24	11	8	2	1	2
Accident Rate	0.35	0.22	0.57	0.59	83.2	2.91
Fatal Accidents	5	2	2	0	1	0
Fatal Accident Rate	0.07	0.04	0.14	0.00	83.2	0.00
Fatalities	350	344	3	0	3	0
Fatality Rate	5.13	6.86	0.21	0.00	250.00	0.00

NOTE: 1. Accident/Incident Rate Per 100,000 Flight Hours.  
\*2. Flight Hours are estimated for Calendar Year 1979.

<u>TABLE:</u>	3-3
<u>TITLE:</u>	TRUNK AIR CARRIER ACCIDENT STATISTICS
<u>PURPOSE:</u>	Comparison of trunk accident rates from 1975 to 1979.
<u>OBSERVATION:</u>	<ol style="list-style-type: none"><li>1. Total accident rate has decreased.</li><li>2. 1979 fatal accident rate is comparable to 1975 - 1977 rates.</li><li>3. The high fatality rate is the result of two major accidents.</li></ol>

TABLE 3-3  
TRUNK AIR CARRIER ACCIDENT STATISTICS  
(1975 - 1979)

	<u>1975 - 1977</u>	<u>1978</u>	<u>1979</u>
Number of Carriers	10	10	10
Flight Hours	12,946,197	4,618,797	5,013,466*
Accidents			
Accident Rate	51 0.39	14 0.30	11 0.22
Fatal Accidents	3	4	2
Fatal Accident Rate	0.02	0.09	0.04
Fatalities	152	16	344
Fatality Rate	1.17	0.35	6.86

NOTE: 1. Accident/Incident Rate per 100,000 Flight Hours.  
2. Flight Hours are estimated for Calendar Year 1979.

TABLE: 3-4

TITLE: EFFECTS OF EXPANSION - TRUNK CARRIERS

PURPOSE: Divides trunk carriers into groups based on their expansion in 1979 and compares these groups against the totals and each other.

NOTICE: THE 1979 TOTALS AND RATES SHOWN IN THIS TABLE ARE FOR THE PERIOD FROM JANUARY 1 THROUGH SEPTEMBER 30.

TABLE 3-4  
EFFECTS OF EXPANSION - TRUNK CARRIERS

	<u>1979</u>	<u>Totals</u>	<u>Group I</u>	<u>Group II</u>	<u>Group III</u>
Number of Carriers	10	3	4	3	3
Flight Hours	3,613,466	1,229,824	1,714,662	668,980	
Accidents	8	1	5	2	
Accident Rate	0.22	0.08	0.29	0.30	
Fatal Accidents	1	0	1	0	
Fatal Accident Rate	0.03	0.00	0.58	0.00	
Fatalities	275	0	275	0	
Fatality Rate	7.61	0.00	16.03	0.00	
Incidents	327	180	93	54	
Incident Rate	9.05	14.64	5.42	8.07	
Violations Filed	194	53	79	62	
Violation Rate	5.37	4.31	4.61	9.27	

NOTE: 1. Rates Per 100,000 Flight Hours.

Group I - No Expansion  
Group II - Conservative Expansion  
Group III- Expansion

TABLE: 3-5  
TITLE: EFFECTS OF EXPANSION - TRUNK CARRIERS  
1978 vs. 1979  
PURPOSE: Comparison of the 1979 trunk groups from Table 3-4 with the 1978 data to determine if a similar trend occurred in 1978.

NOTICE: THE 1979 TOTALS AND RATES SHOWN IN THIS TABLE ARE FOR THE  
PERIOD FROM JANUARY 1 THROUGH SEPTEMBER 30.

TABLE 3-5  
EFFECTS OF EXPANSION - TRUNK CARRIERS

	Group I		Group II		Group III	
	1978	1979	1978	1979	1978	1979
Number of Carriers	3	3	4	4	3	3
Flight Hours	1,788,644	1,229,824	2,145,202	1,714,662	684,952	668,980
Accidents	2	1	11	5	1	2
Accident Rate	0.11	0.08	0.51	0.29	0.15	0.30
Fatal Accidents	1	0	2	1	1	0
Fatal Accident Rate	0.06	0.00	0.09	0.58	0.15	0.00
Fatalities	10	0	4	275	2	0
Fatality Rate	0.56	0.00	0.19	16.03	0.29	0.00

NOTE: 1. Rates Per 100,000 Flight Hours

Group I - No Expansion  
Group II - Conservative Expansion  
Group III- Expansion

TABLE: 3-6

TITLE: LOCAL SERVICE AIR CARRIER ACCIDENT STATISTICS  
1975 - 1979

PURPOSE: Provide a comparison of local service accident rates from 1975 to 1979.

OBSERVATION: 1. 1979 rates were slightly higher than the average for the recent years. This is primarily due to the inclusion of the new operators.

TABLE 3-6  
LOCAL SERVICE AIR CARRIER ACCIDENT STATISTICS  
(1975 ~ 1979)

	<u>1975 - 1977</u>	<u>1978</u>	<u>1979 *</u>
Number of Carriers	8	8	18
Flight Hours	2,851,820	1,041,549	1,404,279
Accidents			
Accident Rate	1.4 0.49	6 0.58	8 0.57
Fatal Accidents			
Fatal Accident Rate	2 0.07	1 0.10	2 0.14
Fatalities			
Fatality Rate	70 2.46	3 0.29	3 0.21

NOTE: 1. Rates Per 100,000 Flight Hours  
\*2. Flight Hours are estimated for Calendar Year 1979.

TABLE: 3-7

TITLE: EFFECTS OF EXPANSION - LOCAL SERVICE AIR CARRIERS (1979)

PURPOSE: Divides local service carriers into groups based on their expansion in 1979 and compares these groups against the totals and each other.

NOTICE: THE 1979 TOTALS AND RATES SHOWN IN THIS TABLE ARE FOR THE PERIOD FROM JANUARY 1 THROUGH SEPTEMBER 30.

TABLE 3-7  
EFFECTS OF EXPANSION - LOCAL AIR CARRIERS  
(1979)

	1979 Totals	Group I	Group II	Group III	Group IV	Group V
Number of Carriers	16*	3	1	3	4	5
Flight Hours	1,012,143	355,982	89,098	383,305	134,471	49,287
Accidents	6	1	0	3	1	1
Accident Rate	0.59	0.28	0.00	0.78	0.74	2.02
Fatal Accidents	2	1	0	0	0	1
Fatal Accident Rate	0.20	0.28	0.00	0.00	0.00	2.02
Fatalities	3	2	0	0	0	1
Fatality Rate	0.30	0.56	0.00	0.00	0.00	2.02
Incidents	237	127	10	62	9	29
Incident Rate	23.42	35.67	11.22	16.17	6.69	58.83
Violations Filed	114	35	3	48	19	9
Violation Rate	11.26	9.83	3.37	12.52	14.12	18.26

NOTE: 1. Rates Per 100,000 Flight Hours  
\*2. Air Pacific and Midway Airlines were not included in these totals.

Group I - No Expansion  
Group II - Conservative Expansion  
Group III - Expansion  
Group IV - Other Certificated Route Carriers:  
(ex-commercial operators)  
Group V - Other Certificated Route Carriers:  
(ex-commuters)

TABLE: 3-8

TITLE: EFFECTS OF EXPANSION - LOCAL SERVICE AIR CARRIERS  
1978 vs. 1979

PURPOSE: Comparison of 1979 local service groups from Table 3-7 with their 1978 data to determine if similar trends occurred in 1978.

OBSERVATION: 1. The accident trend present in the 1979 groupings was also present in 1978.

NOTICE: THE 1979 TOTALS AND RATES SHOWN IN THIS TABLE ARE FOR THE  
PERIOD FROM JANUARY 1 THROUGH SEPTEMBER 30.

TABLE 3-8  
EFFECTS OF EXPANSION - LOCAL SERVICE CARRIERS\*  
(1978 vs 1979)

	Group I		Group II		Group III	
	<u>1978</u>	<u>1979</u>	<u>1978</u>	<u>1979</u>	<u>1978</u>	<u>1979</u>
Number of Carriers	3	3	1	1	4++	3
Flight Hours	467,933	355,982	112,066	89,098	461,490	383,305
Accidents	2	1	0	0	3	3
Accident Rate	0.42	0.28	0.00	0.00	0.65	0.78
Fatal Accidents	0	1	0	0	1	0
Fatal Accident Rate	0.00	0.28	0.00	0.00	0.21	0.00
Fatalities	0	2	0	0	3	0
Fatality Rate	0.00	0.56	0.00	0.00	0.65	0.00

NOTE: 1. Rates Per 100,000 Flight Hours

\*2. Only the original eight local service air carriers were included in this table

++3. Includes Southern and North Central Airlines separately

Group I - No Expansion  
Group II - Conservative Expansion  
Group III - Expansion

TABLE: 3-9

TITLE: RATES OF COMMUTER AIR CARRIER ACCIDENTS IN SCHEDULED OPERATIONS  
OF OPERATORS REPORTING TO CAB.

PURPOSE: Summarize the accident rates of those commuter operators  
reporting to the CAB.

OBSERVATION: 1. The total accident rates per 100,000 flight hours and  
departures are down from 1978.

NOTICE: THE ACCIDENTS SHOWN IN THIS TABLE ARE ONLY THOSE INVOLVING  
AIRCRAFT OF COMPANIES WHICH REPORT TO THE CAB THAT THEY  
CONDUCT COMMUTER AIRLINE OPERATIONS. IN SOME CASES, NO CLEAR  
DETERMINATION COULD BE MADE OF WHETHER THE PARTICULAR FLIGHT  
WAS DIRECTLY RELATED TO A COMPANY'S SCHEDULED COMMUTER  
OPERATION. IN THESE CASES, THE ACCIDENT WAS INCLUDED IN THE  
TABLE.

TABLE 3-9  
RATES OF COMMUTER AIR CARRIER ACCIDENTS IN SCHEDULED OPERATIONS  
OF OPERATORS REPORTING TO CAB

Year	Accidents			Accident Rate			Departures				
	Total	Fatal	Fatalities	Per 100,000	Flt. Hours	Per 100,000					
	Total	Fatal	Fatalities	Total	Fatal	Fatalities	Flt. Hours				
1975	38	8	22	4.0	0.8	2.3	2.6	0.5	1.5	950,410	1,475,579
1976	34	10	30	3.5	1.0	3.1	2.2	0.7	2.0	966,931	1536,130
1977	36	7	28	3.2	0.6	2.5	2.1	0.4	1.7	1,115,858	1,680,491
1978	51	12	46	4.0	0.9	3.6	2.6	0.6	2.4	1,273,000	1,954,731
1979	39	10	57	3.4	0.9	4.9	2.1	0.5	3.0	1,161,690*	1,890,414*

\* 1979 Data Preliminary. Hours and Departures Estimated.

<u>TABLE:</u>	3-10
<u>TITLE:</u>	COMMUTER AIR CARRIER OPERATIONS
<u>PURPOSE:</u>	Comparison of passenger/cargo operations vs. cargo/mail only operations.
<u>OBSERVATION:</u>	1. Commuters engaged in passenger service have substantially lower accident, incident, and violation rates than those conducting cargo/mail only service.
<u>NOTICE:</u>	THE 1979 TOTALS AND RATES SHOWN IN THIS TABLE ARE FOR THE PERIOD FROM JANUARY 1 THROUGH SEPTEMBER 30.
	THE ACCIDENTS SHOWN IN THIS TABLE INCLUDE ONLY THOSE DIRECTLY RELATED TO A COMPANY'S COMMUTER AIRLINE OPERATION, E.G., SCHEDULED FLIGHT, TRAINING, OR FERRY OF AIRCRAFT. ALL CERTIFICATED COMMUTERS WERE INCLUDED REGARDLESS OF THEIR REPORTING STATUS WITH THE CAB. BECAUSE THE NTSB IS STILL CARRYING THEM AS ACCIDENTS, FIVE ACCIDENTS REPORTED BY THE FAA REGIONS AS INCIDENTS WERE INCLUDED IN THE ACCIDENT TOTALS. SUBSEQUENT TABLES IN THIS REPORT INVOLVING COMMUTER AIRLINES USE AS THEIR BASE THE ASSUMPTIONS (SEE PAGE 21, PARAGRAPH 2) MADE IN THE CONSTRUCTION OF THIS TABLE.

TABLE 3-10  
COMMUTER AIR CARRIER OPERATIONS

	<u>Total</u>	<u>Passenger and Cargo</u>	<u>Cargo and Mail Only</u>
Number of Carriers	306	262	44
Flight Hours	1,372,418	1,258,480	113,938
Accidents	49	30**	19
Accident Rate	3.57	2.38	16.68
Fatal Accidents	10	7	3
Fatal Accident Rate	0.73	0.56	2.63
Fatalities	47	42	5
Fatality Rate	3.42	3.34	4.39
Incidents	219	195	24
Incident Rate	15.96	15.49	21.06
Violations Filed	357	304	53
Violation Rate	26.01	24.14	46.52

NOTE: 1. Rates Per 100,000 Flight Hours  
 \*\*2. Includes 5 Scheduled Cargo Only Flights

<u>TABLE:</u>	3-11
<u>TITLE:</u>	TRUNK, LOCAL, AND COMMUTER (PASSENGER SERVICE)
<u>PURPOSE:</u>	Provide a comparison of the overall accident, incident, and violation record of the major carrier engaged in passenger service.
<u>OBSERVATION:</u>	<ol style="list-style-type: none"><li>1. The lowest accident rates for major passenger service carriers were experienced by the trunks.</li></ol>
<u>NOTICE:</u>	THE 1979 TOTALS AND RATES SHOWN IN THIS TABLE ARE FOR THE PERIOD FROM JANUARY 1 THROUGH SEPTEMBER 30.

TABLE 3-11  
TRUNK, LOCAL AND COMMUTER (PASSENGER SERVICE)\*

	<u>TRUNKS</u>	<u>LOCALS</u>	<u>COMMUTER</u>
Number of Carriers	10	16*	262
Flight Hours	3,613,466	1,012,143	1,258,480
Accidents	8	6	30
Accident Rate	0.22	0.59	2.38
Fatal Accidents	1	2	7
Fatal Accident Rate	0.03	0.20	0.56
Fatalities	275	3	42
Fatality Rate	7.61	0.30	3.34
Incidents	327	237	195
Incident Rate	9.05	23.42	15.49
Violations Filed	194	114	304
Violation Rate	5.37	11.26	24.14

NOTE: 1. Rates Per 100,000 Flight Hours  
2. Midway Airlines and Air Pacific had just begun  
operations and were not included.

<u>TABLE:</u>	3-12
<u>TITLE:</u>	COMPARISON OF COMMUTERS (PASSENGER SERVICE) BY TOTAL HOURS
<u>PURPOSE:</u>	To determine if there is a relationship between total flight hours flown and accident, incident, and violation rates.
<u>OBSERVATION:</u>	<p>1. There is a distinct relationship between the overall safety records of the groups based on total annual hours flown. The operators with the higher flight hours are experiencing the lowest rates.</p>
<u>NOTICE:</u>	THE 1979 TOTALS AND RATES SHOWN IN THIS TABLE ARE FOR THE PERIOD FROM JANUARY 1 THROUGH SEPTEMBER 30.

TABLE 3-12  
COMPARISON OF SAFETY RECORD OF COMMUTERS CONDUCTING  
SCHEDULED PASSENGER SERVICE BY TOTAL FLIGHT HOURS

	Total	Group I	Group II	Group III	Group IV
Number of Operators	262	128	88	33	12
Flight Hours	1,258,480	138,650	399,201	402,048	318,581
Accidents	30	8	16	3	3
Accident Rate	2.38	5.77	4.01	0.75	0.94
Fatal Accidents	7	3	2	1	1
Fatal Accident Rate	0.56	2.16	0.50	0.25	0.31
Fatalities	42	6	25	3	8
Fatality Rate	3.34	4.32	6.26	0.75	2.51
Incidents	195	47	69	54	25
Incident Rate	15.49	33.89	17.28	13.43	7.85
Violations Filed	304	92	123	54	35
Violation Rate	24.14	66.35	30.81	13.43	10.99

NOTE: 1. Rates Per 100,000 Flight Hours  
 Group I : 0 - 2499 Flight Hours  
 Group II : 2500 - 8499 Flight Hours  
 Group III: 8500 - 19,999 Flight Hours  
 Group IV : 20,000 +

TABLE: 3-13

TITLE: LOCAL SERVICE VS. COMMUTER (PASSENGER SERVICE)

PURPOSE: Compare the 1979 commuter safety record in passenger service with comparable local service carriers records.

OBSERVATION:

1. The larger commutes, as a group, have a safety record comparable with the 1979 local service carriers.
2. The accident rates of the smaller commutes significantly exceed those of both local service carriers and large commutes.

NOTICE: THE 1979 TOTALS AND RATES SHOWN IN THIS TABLE ARE FOR THE PERIOD FROM JANUARY 1 THROUGH SEPTEMBER 30.

TABLE 3-13  
LOCAL VS COMMUTER (PASSENGER SERVICE)

	Local Air Carrier		Commuter Air Carrier 1979		
	Total 1979	Groups I & II	Total 1979	Groups I & II	Groups III & IV
Number of Carriers	16*	—	262	217	45
Flight Hours	1,012,143	—	1,258,480*	537,851*	720,629*
Accidents	6	—	30	24	6
Accident Rate	0.59	—	2.38	4.46	0.83
Fatal Accidents	2	—	7	5	2
Fatal Accident Rate	0.20	—	0.56	0.93	0.27
Fatalities	3	—	42	31	11
Fatality Rate	0.30	—	3.34	5.76	1.53
Incidents	237	—	195	116	79
Incident Rate	23.42	—	15.49	21.57	10.96
Violations Filed	114	—	304	215	89
Violation Rate	11.26	—	24.14	39.97	12.35

NOTICE :1. Rates Per 100,000 Flight Hours

\*2. Midway Airlines and Air Pacific had just begun operations and are not included in this total.

Group I : 0 - 2499 Flight Hours  
 Group II : 2500 - 8499 Flight Hours  
 Group III: 8500 - 19,999 Flight Hours  
 Group IV : 20,000 +

TABLE: 3-14TITLE: COMMUTER AIR CARRIERS (Passenger Service)  
BY RATE OF EXPANSION (1979)

PURPOSE: To determine if the expansion, as indicated by increase in projected annual flight hours, of the commuters is increasing the rate of accident, incident, and violation occurrence.

OBSERVATION:

1. The rate of expansion in flight hours did not have an apparent adverse effect on the commuter accident, incident, and violation rate during the first 9 months of 1979.
2. Eight of the nine accidents occurring in the last three months occurred in Groups III, IV and V; the groups that had the most marked increase in flight hours in 1979.
3. The operators who had the least expansion had the highest accident rates.
4. The new operators had rates comparable to the better groupings of established commuters.

NOTICE: THE 1979 INFORMATION ABOVE THE DASHED LINE IS FOR THE PERIOD FROM JANUARY THROUGH SEPTEMBER. THE INFORMATION BELOW THE DASHED LINE IS THE FULL CALENDAR YEAR 1979.

TABLE 3-14  
COMMUTER AIR CARRIER IN PASSENGER SERVICE BY RATE OF EXPANSION (1979)

	<u>Group I</u>	<u>Group II</u>	<u>Group III</u>	<u>Group IV</u>	<u>Group V</u>	<u>Group VI</u>	<u>Unassigned</u>
Number of Operators	29	32	19	24	38	49	71
Flight Hours*	103,261	218,706	198,472	173,372	244,364	101,548	218,756
Accidents*	11	8	1	2	2	1	5
Accident Rate	10.65	3.66	0.50	1.15	0.82	0.98	2.29
Incidents*	25	54	18	22	35	11	30
Incident Rate	24.21	24.69	9.07	12.69	14.32	10.83	13.71
Violations Filed*	81	38	21	18	65	20	61
Violation Rate	78.44	17.37	10.58	10.38	26.60	19.70	27.88
Flight Hours**	137,681	291,608	264,629	231,162	325,818	135,397	291,675
Accidents**	11	8	3	4	6	1	6
Accident Rate	7.98	2.74	1.13	2.30	1.84	0.74	2.05

NOTE: 1. Rates Per 100,000 Flight Hours

Group I : No Expansion

Group II : 1 to 25%

Group III: 26 to 50%

Group IV : 51 to 100%

Group V : 101% +

Group VI : New Operators

Unassigned: Insufficient data to establish group category.

<u>TABLE:</u>	3-15
<u>TITLE:</u>	ACCIDENTS IN COMMUTER AIR CARRIER OPERATIONS (Calendar Year 1979)
<u>PURPOSE:</u>	Provide end-of-year accident information for report.
<u>OBSERVATION:</u>	1. Commuters engaged in passenger service continued to have a substantially lower rate than cargo/mail only operators (Ref: Table 3-10).

TABLE 3-15  
ACCIDENTS IN COMMUTER AIR CARRIER OPERATIONS  
(Calendar Year 1979)

	<u>Total</u>	<u>Passenger and Cargo</u>	<u>Cargo and Mail Only</u>
Number of Carriers	306	262	44
Flight Hours	1,829,890**	1,677,973**	151,917**
Accidents	58	39	20
Accident Rate	3.17	2.32	13.17
Fatal Accidents	13	9	4
Fatal Accident Rate	0.71	0.54	2.63
Fatalities	61	55	6
Fatality Rate	3.33	3.28	3.95

NOTE: 1. Rates Per 100,000 Flight Hours  
\*\*2. Projected Annual Flight Hours

<u>TABLE:</u>	3-16
<u>TITLE:</u>	MAJOR SCHEDULED CARRIERS (PASSENGER SERVICE) ACCIDENTS
<u>PURPOSE:</u>	Provide end-of-year accident comparison of major scheduled carriers in passenger service.
<u>OBSERVATION:</u>	1. No perceptable changes occurred in the fourth quarter of 1979 (Ref: Table 3-11).

TABLE 3-16  
 MAJOR SCHEDULED CARRIERS (PASSENGER SERVICE) ACCIDENTS  
 (Calendar Year 1979)

	<u>Trunks</u>	<u>Locals</u>	<u>Commuter</u>
Number of Carriers	10	18	262
Flight Hours	5,013,466**	1,404,279**	1,677,973**
Accidents	11	8	39
Accident Rate	0.22	0.57	2.32
Fatal Accidents	2	2	9
Fatal Accident Rate	0.04	0.14	0.54
Fatalities	344	3	55
Fatality Rate	6.86	0.21	3.28

NOTE: 1. Accident/Incident Rate per 100,000 Flight Hours  
 \*\*2. 1979 Data Preliminary. All flight hours estimated

TABLE: 3-17

TITLE: SUMMARY OF OTHER OPERATORS

PURPOSE: To display the accident data for all other operations involving in carriage of persons or property for hire.

TABLE 3-17  
SUMMARY OF OTHER OPERATORS

		Charter		Scheduled Cargo		418 Cargo Operators		Commercial Operators		Air Taxi	
		1978	1979*	1978	1979*	1978	1979*	1978	1979*	1978	1979*
Number of Operators	6	6	6	3	3	7	11	24	23	3,535***	
Flight Hours	184,629	184,204	137,638	136,294	66,868	100,132	275,392	135,079	13,898,573++		
Accidents	2	2	0	3	0	1	1	1	2	137+++	
Accident Rate **	1.08	1.08	0.00	2.20	0.00	1.10	0.36	1.48	3.15		
Fatal Accidents	0	1	0	0	0	0	0	1	0	27+++	
Fatal Accident Rate**	0.00	0.54	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.69	
Fatalities	0	3	0	0	0	0	0	144	0	60+++	
Fatality Rate **	0.00	1.63	0.00	0.00	0.00	0.00	0.00	52.29	0.00	1.54	

NOTE: \* All 1979 Data Preliminary. Hours Estimated

\*\* Rates per 100,000 Flight Hours

\*\*\* As of December 1, 1979

++ Hours Projected from FAA estimates obtained October 1, 1979

+++ Because of the delays in identifying air taxi accidents, these numbers are subject to change.

## CHAPTER IV

### ADEQUACY OF AIR SAFETY REGULATIONS

Section 107 of the Act requires an analysis of the effects on current levels of air safety of changes or proposals for changes in air carrier operating practices and procedures which occurred during the calendar year covered by this report and the adequacy of the air safety regulations considering these changes.

#### A. SUMMARY OF FINDINGS

1. No significant changes or proposals for changes in operating practices or procedures were submitted by the air carriers as a result of the implementation of deregulation in calendar year 1979.
2. Based on the operational experience thus far, the FAA has not identified a need to require significant changes to air carrier operating practices and procedures as a result of deregulation.
3. The FAA is processing some proposals for change to the air safety regulations as a result of deregulation; however, the operational experience of the industry in the deregulated environment is not yet sufficient to identify areas where further regulatory change may be necessary.

#### B. CHANGES IN AIR CARRIER OPERATING PRACTICES AND PROCEDURES

Although the Act has been in effect for 14 months, the air carriers have not requested FAA approval for any significant changes to their procedures which can be attributed to deregulation. The operation and maintenance of aircraft, regardless of the number of aircraft and frequency of operation, is still accomplished in accordance with practices and procedures approved prior to deregulation.

#### C. CHANGES TO MAINTENANCE PROGRAMS

Increases or decreases in air carrier fleet counts have no significant bearing on the maintenance procedures unless a new type of aircraft is involved. They do have a proportionate effect on manpower and facilities. The carrier develops a maintenance program for each fleet (type of aircraft). It includes work forms to control and record accomplishment of the tasks and detailed instructions and specifications for the use of the persons performing the tasks. Development of a maintenance program for a new aircraft is a major undertaking which is normally started years before the first airplane of the new fleet enters service; however, the program is unaffected by addition or deletion of aircraft from an existing fleet.

Changes to fleet size, which could be accelerated in a deregulated industry, will have a direct affect on the work force and maintenance facilities. Small increases of fleet size in the order of 5% or higher can initially be accommodated by the existing work force and facilities, when followed by an orderly increase in maintenance capability to accommodate the change. Substantial increases demand immediate expansion of maintenance capability which is usually difficult to accomplish if the change was not anticipated in time to properly prepare for it. The availability of mechanics and the need to qualify them for the tasks to which they will be assigned, or the expansion of facilities such as constructing hangers, obviously takes time. If adequate preparation is not made, the work force and facilities are overtaxed with a resultant exposure to improper or inadequate maintenance accomplishment.

FAA surveillance workload is affected accordingly. The predominant thrust of FAA surveillance is toward compliance with the carrier's maintenance program, work force competency and adequacy, and the adequacy of the facilities. Increases in fleet size that do not overtax the carrier's maintenance capability and do not involve new aircraft types do not impose a particular burden on the FAA. Significant increases that the carrier has not prepared for, or that otherwise overtax the carrier's maintenance capability, impose an immediate and critical surveillance workload on the FAA.

#### D. CHANGES TO OPERATIONAL PROGRAMS

Operational policies and procedures which have a direct impact on air safety are also developed at the carrier's inception and modified through the years with FAA approval as the carrier changes equipment, type of operation, and with the general state-of-the-art in the air carrier industry. The addition of aircraft, pilots, other crewmembers, and support resources does not change the requirement that the carrier must follow these procedures until approval of revised procedures. As with the maintenance programs, the problems associated with unanticipated accelerated growth stem primarily from the carrier's capability to support this growth within its available resources and still follow the procedures.

#### E. CHANGES TO AIR SAFETY REGULATIONS

There are some preliminary indications resulting from the operational experience in the deregulated environment that some changes to the regulations will be necessary. These areas are being explored for proposed rulemaking. There was a 1978 change to the regulations under which the commuter airlines operate, and some are being proposed, which could impact the commuter airlines in calendar year 1980.

##### 1. Revision to FAR Part 135.

Prior to deregulation in 1978, Part 135 (Air Taxi and Commercial Operators of Small Aircraft) of the Federal Aviation Regulations was revised to levy more stringent operating standards, especially for the commuter airlines; however, they were not required to meet

these standards until the last quarter of 1979. This revision, and the associated FAA surveillance, will have a significant impact on the operations and safety of the commuter airlines in calendar year 1980.

2. Proposed Rulemaking - FAR Part 24 - Airworthiness Standards Multi-Engine Light Transport Category Aircraft.

The multi-engine light transport aircraft is expected to become an integral part of the commuter airline fleet in the 1980's. The proposed regulation will provide a separate set of airworthiness standards for multi-engine airplanes that have a maximum passenger seating configuration, excluding any pilot seat, of 60 seats and a maximum gross weight of 50,000 lbs. In summary, it would establish certification standards higher than those contained in Part 23 of the Federal Aviation Regulations (small aircraft certification standards) but, in some cases, less than those in Part 25 (large transport category aircraft certification standards). This proposal should be available for public comment before April 1980.

3. Proposed Rulemaking - Security Screening for Commuter Air Carriers.

On November 1, 1979, the FAA issued a Notice of Proposed Rule Making for public comment which outlined 100 percent screening requirements for commuter airlines providing scheduled passenger service with aircraft seating 20 passengers or more. The results of this proposal are expected by the end of April 1980.

## CHAPTER V

### LEVELS OF SURVEILLANCE AND STAFFING

Section 107 of the Airline Deregulation Act requires annual recommendations from the Secretary of Transportation with respect to the level of surveillance necessary to enforce air safety regulations and the level of staffing necessary to carry out this surveillance. It also requires an analysis of the FAA's current and anticipated personnel requirements with respect to enforcement of air safety regulations. This chapter outlines the FAA policies regarding level of surveillance on the air carrier operators, reviews the current staffing, and the anticipated requirements for 1980.

#### A. RECOMMENDATIONS FOR 1980 LEVELS OF SURVEILLANCE

1. The mandatory FAA surveillance program (see Appendix 1) for commuter airlines and air taxis should be continued through December 31, 1980, with special emphasis to the smaller commuters.
2. The FAA policies for national application in the ongoing air carrier surveillance program (see Appendix 2) should be continued for all other air carriers with special emphasis to the new local service carriers and other carriers which are expanding under the new economic options.

#### B. RECOMMENDATIONS FOR 1980/81 STAFFING

1. As soon as administratively possible, 50 additional Flight Standards regulatory positions will be assigned to the field offices in FY-1980. These positions will be taken from other FAA programs.
2. By 1981, a net increase of 154 Flight Standards regulatory positions should be assigned to the field offices. (This figure includes the 50 positions assigned in 1980.) Of these positions, 27 will be taken from FAA sources and 127 will be requested in the 1981 budget submission to Congress.

#### C. RECOMMENDATION FOR INCREASED PENALTIES FOR FAILURE TO COMPLY WITH REGULATIONS

The effectiveness of FAA surveillance would be materially enhanced by congressional enactment of the proposed increase in the FAA's civil penalty authority up to 25,000 dollars and the addition of criminal penalties for certain limited offenses.

#### D. NATIONAL AIR CARRIER SURVEILLANCE POLICIES

The FAA Regions are provided with national policies (FAA Order 1800.12D) outlining orders of priority which will normally be observed in programming and accomplishing various field office work programs (see Appendix 2). This concept allows the Regions and field offices to devote their manpower resources where they believe the greatest need exists, within the national priorities. It has worked well in application.

The FAA has, however, instituted a mandatory national policy which requires their field offices to apply higher levels of surveillance (see Appendix 1) during the initial period of the commuter airlines' expansion and transition to higher operational standards. This was done to ensure field office emphasis during the period of commuter expansion and transition.

#### E. IMPACT OF MANDATORY SURVEILLANCE POLICY ON STAFFING

By way of establishing a basis for estimating the effect the mandatory surveillance policies will have on inspector staffing requirements, it should be noted that in 1978, prior to revision of the regulations for air taxis/commuter airlines (FAR Part 135), the FAA regions reported a resource utilization of 430,233 man-hours (239 man-years out of 974 available) for air taxi certification, inspection and surveillance. These figures do not include the factoring of non-program time vs. travel, training, supervisory duties, and other administrative activities.

Considering these non-program factors, it appears that approximately 353 man years were necessary to meet the FAA regional goals set under a national policy which provided the flexibility to set goals and programs within broad guidelines. Now that they are functioning under the stricter national policies requiring higher levels of surveillance they estimate that 487 man years will be required to carry out the air taxi/commuter surveillance program through 1981.

#### F. IMPACT ON OTHER SAFETY PROGRAMS

Naturally, these requirements would have significant impact to the ongoing safety program workload if additional manpower is not made available to the regions. Concentration of the existing resources in the air taxi/commuter airline program would result in a diversion of the work force away from the other program activities, e.g., surveillance and certification of pilots, mechanics, pilot schools, agricultural operators, external load operators, maintenance technician schools, and repair stations. These activities were reduced in calendar year 1979 when more than 50% of the available journeyman manpower was used to recertify the air taxis under the new standards.

#### G. FLIGHT STANDARDS FIELD REGULATORY STAFFING

After factoring for non-program time and allowing for revision of surveillance guidelines for 1981, the FAA estimates their additional 1981 manpower requirements to perform the air taxi/commuter airline program, keep other safety programs at viable levels, and allowing for industry expansion, to be 154 journeyman-level regulatory positions. At the present time, the workload requirements of deregulation, in addition to ongoing air taxi/commuter surveillance as reported by the FAA regions, is 148 man-years. Again, this figure does not include factoring for the non-program time. Assuming no break in the rate of certification of new commuter airlines (20 were certified between October 1 and December 31, 1979) and the continued expansion of the established ones, this workload will continue through calendar year 1981.

After consideration of the impact on public safety of the various safety programs, it is evident that the program with the most immediate potential for impact on public safety (excluding major air carriers) is the air taxi/commuter airline program. Therefore, the FAA Administrator plans to concentrate whatever resources are necessary in this program until the expansion and transition period has leveled off. The crucial issue is what to do to assure that other safety programs remain viable during that period.

Some actions the Administrator now has underway are (1) plans to move 27 Flight Standards headquarters and regional staff positions to regulatory field office positions in 1981 and (2) submission of a request for 127 additional regulatory positions in the FY 1981 budget. Until such time as the 1981 positions become available, the Administrator has already taken steps to allocate 50 full-time permanent positions to the field offices for the accomplishment of other Flight Standards safety programs, which were impacted by the concentration of personnel in areas directly affected by deregulation. These positions are in addition to the 36 positions the FAA received in the 1980 appropriation bill. The 36 positions are being assigned to the airworthiness programs primarily concerned with transport aircraft certification and maintenance.

Assuming all planned actions occur, the 1980 Flight Standards Operations and Airworthiness Inspector field staffing level will increase by 50 positions, from 1642 to 1692. It will further increase by 104 positions in FY 1981, from 1692 to 1796. The net increase of these actions will be 154 Flight Standards field regulatory positions in 1980-81.

#### H. AVIATION SECURITY STAFFING

There are currently 178 positions assigned to the FAA's region and field office aviation security programs. Assuming that the proposed change to the regulations discussed in Chapter IV is adopted, it would significantly increase the workload on the existing work force.

This additional workload can be accommodated with the present staffing levels by modifying work program emphasis areas until the initial security programs for the commuter airlines impacted by this proposed regulation are approved and working satisfactorily.

#### I. EFFECTIVENESS OF PRESENT AUTHORIZED MAXIMUM PENALTIES AS DETERRENT

The present maximum civil penalty for failure to comply with a Federal Aviation Regulation is set at 1,000 dollars per occurrence. In many cases, the cost of complying with the regulations far exceeds this figure. Some operators, when faced with a decision between compliance and cost, have elected to operate in violation of regulations. They are usually prepared to pay the penalties when apprehended. This attitude makes a mockery of the regulations and serves to discourage other operators who comply with them. In some cases, the decisions made and the policies espoused by these types of operators have serious effects on air safety, and yet they face only limited civil penalties or civil action against their operating certificates.

**APPENDIX 1**

**FAA NOTICE 8000.176**

# NOTICE

## DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

W 8000. 176

4/25/79

Cancellation  
Date: 4/1/80

### SUBJ: INCREASED SURVEILLANCE FOR OPERATORS UNDER NEW PART 135

1. PURPOSE. This notice directs increased surveillance of scheduled air taxi operators complying with the new Part 135 and prescribes additional actions that emphasize the higher level of safety required in Part 135 operations.

2. DISTRIBUTION. This notice is distributed to all Washington and Regional Flight Standards Offices to the branch level; to branch levels in the FSNFO; and to all Flight Standards Field Offices.

#### 3. BACKGROUND.

a. The Airline Deregulation Act requires the FAA to establish such safety standards as may be required to ensure that the level of safety provided to persons traveling on air taxi air carriers is, to the maximum feasible extent, equivalent to the level of safety provided to persons traveling on air carriers providing service pursuant to certificates issued by the Civil Aeronautics Board under Section 401 of the Act. The revised Part 135, effective December 1, 1978, was promulgated as a result of the need for an increased level of safety in all air taxi operations.

b. We are sending under separate cover to each Air Carrier District Office, General Aviation District Office, and Flight Standards District Office a copy of the National Transportation Safety Board 1977 "Briefs of Accidents Involving Commuter Air Carriers and On-Demand Air Taxi Operations." This report underscores the need for close FAA surveillance of pilot training programs and pilot proficiency. The Board cites that pilots were the cause of 75 percent of the 1977 commuter air carrier fatal accidents and 64 percent of all accidents. Pilots were cited by the Board as the cause of 87 percent of the 1977 fatal accidents involving on-demand air taxis and 73 percent of the total accidents. This report is replete with pilot factors such as

- (1) Attempted operation with known deficiencies in equipment.
- (2) Attempted VFR flight into adverse weather conditions.
- (3) Delayed action in aborted takeoff.
- (4) Failed to obtain/maintain flying speed.
- (5) Failed to follow approved procedures.

Distribution: A-WX(FS)-3; A-FFS-0(MAI);  
AFS-500 (20 cys)

Initiated By: AFS-201

- (6) Premature liftoff.
- (7) Improper level off.
- (8) Improper IFR operation.
- (9) Mismanagement of fuel.
- (10) Failed to assure geardown and locked.
- (11) Misjudged distance and speed.
- (12) Failed to maintain directional control.
- (13) Failed to initiate go-around.

c. From the above it is obvious that considerable improvement in the proficiency and knowledge of air taxi pilots is a must. Last month the Administrator announced a vigorous enforcement program. Enforcement and Section 609 actions will be used as necessary to improve the Part 135 safety record—the record indicates a need for more Section 609 reexaminations.

d. Recent air taxi accidents and the dramatic two-fold increase in accidents from a year ago, also points up the need for special surveillance of air taxi operators. Inspector efforts must be directed to ensure that air taxis are in fact providing the increased level of safety required by the rule.

e. While it is realized that many thousands of inspector manhours will be utilized to recertify operators under the new Part 135, it is considered vitally important that increased surveillance be accomplished on all scheduled air taxis during the first 12 months they are in operation under the new Part 135.

4. ACTION. The upgrading of air taxi/commuter safety has the highest priority within Flight Standards; therefore, field division chiefs and district office managers must use all available resources to ensure emphasis is placed on the air taxi/commuter program and that the following additional work functions are accomplished during the first year scheduled operators are operating under the new Part 135.

a. Discuss with each president/owner the importance of a more effective accident prevention program and emphasize that FAA field inspectors will be conducting increased surveillance to ensure complete compliance with the new rule.

b. Conduct the pilot in command proficiency check for pilots flying aircraft with 10 or more seats.

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- c. Conduct 25 percent of the pilot in command proficiency checks for pilots flying aircraft with less than 10 seats.
- d. Monitor sufficient ground and flight training to ensure the operator is conducting training in accordance with the approved training program and that emphasis is placed on aircraft emergency procedures, single-engine procedures, crew coordination, etc.
- e. Conduct en route inspections on 25 percent of the pilots in command flying for each operator.
- f. During redesignation of the check airmen ensure that they are familiar with all the flight check requirements of the new Part 135 and the standards of proficiency expected on flight checks.
- g. During en route inspections place special emphasis on pilot's knowledge of weight and balance procedures, takeoff and landing performance data, cockpit procedures, and adherence to company standard operating procedures as published in company manuals.
- h. Conduct a comprehensive review of each operator's approved weight and balance procedures to ascertain that these procedures are adequate to ensure a properly loaded aircraft.
- i. Conduct a minimum of one ramp inspection on each aircraft with 10 or more seats.
- j. Conduct a ramp inspection on 50 percent of the multi-engine aircraft with 9 or less seats.
- k. Conduct ramp inspections on 10 percent of the single-engine aircraft.
- l. Conduct a spot inspection each 6 months for each operator using multi-engine aircraft and each year for operators using single-engine aircraft. During spot inspections, inspectors should ascertain that the operators' maintenance facility or contract facility is complying with the operators' approved maintenance/inspection program and that all pertinent airworthiness directives are being complied with.
- m. Monitor sufficient maintenance training to ensure the operator is conducting training in accordance with the approved training program.
- n. The increased surveillance outlined in this paragraph will be extended to on-demand air taxi and scheduled all-cargo operators if manpower resources permit.

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5. RESPONSIBILITIES. The field offices will submit to their Flight Standards Division copies of all documentation associated with this increased emphasis program at the end of each 90 days. Regional offices will forward a consolidated report to AFS-200. (IIS: FS 8000-11)

*J. A. Ferrarese*  
J. A. FERRARESE  
Acting Director  
Flight Standards Service

**APPENDIX 2**

**FAA ORDER 1800.12D**

**(Excerpts)**

## CHAPTER 1. INTRODUCTION

1. PURPOSE. This Order is issued to provide general guidance to Flight Standards field organizational units in the development and executions of their annual work programs.
2. DISTRIBUTION. This order is distributed to all Washington and regional Flight Standards offices to the branch level; to branch level in the Flight Standards National Field Office; and to all Flight Standards field offices.
3. CANCELLATION. Order 1800.12C, Flight Standards Program Guidelines dated September 15, 1970, is cancelled.
4. EXPLANATION OF CHANGES. Major features of this revision are the deletion of work functions and planning norms and the expansion of program emphasis in the regulatory areas.
5. CHANGES TO THIS ORDER. Revisions normally will be issued by means of changes to update selected portions as required. However, revisions requiring expeditious action may be handled by telecom or priority message which will be followed by normal revision procedures. Suggestions for changes are encouraged and may be submitted at any time to the Executive Officer, AFS-10. Flight Standards Service will review the handbook annually and adopted suggestions will be incorporated in a subsequent revision.
6. PROGRAM EMPHASIS.
  - a. The regulatory program has a direct impact on every aspect of civil aviation from preliminary designs and engineering of the aircraft, through the manufacturing stages, flight test and certification, airmen qualification, to the procedures and methods governing flight operations. Additional important functional assignments are the investigation and reporting of aircraft accidents, incidents and violations.
  - b. With the foregoing in mind, national program emphasis items, categorized by program areas, have been established and are intended for guidance to district offices in planning their annual work programs. These items are segments of major program areas that have been identified as having a significant effect on quality of services provided to the public. Should it be determined through analysis and/or surveillance that a particular item is not applicable to the district office environment, the district office chief may disregard that item and concentrate on those that are more consistent with existing environmental factors within a given district office.
7. WORK ACCOMPLISHMENT.
  - a. Air Carrier and General Aviation Programs.

(1) In establishing district office work programs, emphasis will be given to the investigation, inspection and surveillance of existing certificate holders to assure their continued compliance with safety standards. Therefore, the following order of priority will normally be observed in programming and accomplishing district office work programs.

- (a) Accident and Incident Investigation
- (b) Inspection of existing certificate holders
- (c) Surveillance of existing certificate holders
- (d) Enforcement
- (e) Air Carrier Airmen Certification (cockpit crews)
- (f) Flight Instructor Certification
- (g) Commercial Pilot Certification
- (h) Airmen Certification (Other)
- (i) New Operator/Agency Certifications

(2) The above priorities in the order listed will be observed before initiating any new operator/agency certification functions. These priorities are subject to change which, when required, will be transmitted by priority message for expeditious implementation. All field office work programs will require continued assessment and analysis to assure that the results of the assigned priorities reveal the highest achievable level of safety and are not determined by the number of times an item is completed or is compared to a norm or standard.

b. Engineering and Manufacturing Program. In order to execute Flight Standards regulatory programs, field branch and district office chiefs will schedule and coordinate their work programs (approved by the Flight Standards or Aircraft Engineering Division Chief, as appropriate) within the limits of available resources. Priorities will be established for each work function with the function having the greatest import on safety being the highest priority. The chief will assure that the desired level of safety is obtained in his area by accomplishing work activities in such areas as service difficulty reviews, AD issuances and surveillance of ongoing activities prior to initiating any new certification functions. All work programs will require continued assessment and analysis to assure that the results of assigned priorities achieve the highest achievable level of safety.

8.-10. RESERVED.

## CHAPTER 2. PROGRAM EMPHASIS

11. GENERAL. The following emphasis items are listed in order of priority by program area in respective program specialties. These items are not permanent and will ordinarily be deleted or revised on an annual basis, as required. Items that may occur between revisions will be transmitted by priority message for immediate implementation and will be included later in the annual revision.

12. ENGINEERING AND MANUFACTURING.a. Engineering.

(1) Service Difficulty Review and Analysis. An effective service difficulty review program should be conducted to ensure timely action when design defects are involved.

(2) AD Issuance. An awareness of unique operator problems should be reflected in ADs whenever possible, i.e., routine maintenance schedules should be adhered to if safety is not affected.

(3) Type Certificates and Amendments, and Supplemental Type Certificates and Amendments should continue to receive high priority. Assure that all necessary steps are taken in a timely manner to assure noise certification is properly applied to all certification actions.

(4) DER Program. Manage the DER Program to assure compliance with the FARs and ensure that DERs are utilized to the fullest extent practicable.

(5) DOA Program. Assure that intent of DOA Handbook is followed with respect to DOA type certificate activities.

(6) Emphasis should be placed on job efficiency and effectiveness. Personnel should be encouraged to seek better ways to accomplish our mission through procedural changes and/or regulatory changes, if appropriate.

b. Manufacturing.

(1) Service Difficulty Review and Analysis. An effective service difficulty review program should be conducted to ensure timely action when production defects are involved.

(2) AD Issuance. An awareness of unique operator problems should be reflected in ADs whenever possible, i.e., routine maintenance schedule should be adhered to if safety is not affected.

(3) Issuance of original airworthiness certificates, including surplus military aircraft, experimental aircraft and imported aircraft, and airworthiness approval of products fabricated prior to issuance of a PC, should receive high priority.

(4) Production Certificates should continue to receive high priority.

(5) DMR/DOA Program. Manage the DMR/DOA Programs to assure full compliance with the FARs and ensure that delegations are utilized to the fullest extent practicable.

(6) Establish positive controls to ensure that compliance inspections for PMA and TSO suppliers are conducted in a timely manner.

(7) Emphasis should be placed on job efficiency and effectiveness. Personnel should be encouraged to seek better ways to accomplish our mission through procedural changes and/or regulatory changes, if appropriate.

### 13. GENERAL AVIATION.

#### \* a. Airworthiness (Maintenance/Avionics).

(1) Air Taxis. Complete the airworthiness certification of all air taxi certificate holders, and conduct required surveillance and inspection programs to ensure continuing compliance.

(2) Service Difficulty Program. Monitor all Service Difficulty Reports to identify items that may indicate pending catastrophic or significant safety trends. Ensure that assigned certificate holders are complying with regulatory reporting requirements and establish an active program for the submission of reports by industry on a voluntary basis.

(3) Large Aircraft. Surveil each large aircraft (other than Part 135 and executive operators) at least once each quarter to ensure that aircraft are being maintained under appropriate and adequate inspection programs by qualified persons. This surveillance can best be accomplished while the aircraft are undergoing inspection. Check the procedures being utilized and the adequacy of the program.

(4) Repair Stations. Conduct one formal inspection annually and a minimum of one informal inspection quarterly on the following type repair stations:

(a) Powerplant-rated repair stations that perform engine overhaul, rebuilding, turbine engine module maintenance and inspection that is the prime function of their rating.

(b) Repair stations performing nondestructive testing, especially those stations that are performing nondestructive tests in compliance with airworthiness directives.

(c) Repair stations that are major modification centers performing major aircraft avionics systems and interior installations and modifications.

\* (5) Aviation Maintenance Technician Schools (AMTS). Conduct two formal inspections annually on AMTS with emphasis placed on compliance with approved curriculum hours to ensure that time-loss items do not cause deficiencies in instructional hours.

(6) Adherence to Approved Data. Review FAA Form 337 to ensure that FAA-approved data was utilized, conformity of the alteration/repair with the data, and the use of acceptable procedures in performance of the work.

b. Operations.

(1) Air Taxis. Complete the operational recertification of all air taxi certificate holders, and conduct required surveillance and inspection programs to ensure continuing compliance.

(2) Examiner Program. Ensure, through flight test and written test monitoring, regular contact with all examiners, and a demanding examiner selection process, that high standards are maintained.

(3) Air Agencies. Established surveillance and inspection schedules must be maintained to ensure compliance with applicable FAR.

(4) Agricultural Operations. Monitor closely to ensure public safety is not jeopardized. Regular contact with active certificate holders and agricultural industry organizations must be maintained.

(5) Helicopter Operations. Monitor closely all helicopter operations to ensure public safety is not jeopardized.

(6) Executive Operators. Maintain sufficient surveillance and liaison with corporate executive operators to ensure that pilot qualifications and currency requirements are met.

c. Accident Prevention Program.

(1) Safety Meetings, Seminars, and Clinics. Conduct, or arrange for counselors to conduct, safety meetings, seminars, or clinics in accordance with Chapter 3, Par. 31 of HB 8740.1.

(2) Proficiency Flight Training. Develop and administer an active Pilot Proficiency Program in accordance with the instructions contained in A.C. 91-61.

(3) Accidents/Incidents. Monitor accident/incident report data and direct accident prevention efforts toward indicated trend areas and identified cause factors.

(4) Counselor Program. Develop and administer a strong and active accident prevention counselor program.

\* (5) Industry Liaison. Maintain close liaison with aviation organizations, associations, and individuals to identify potential safety problems. Coordinate corrective actions through the chief with other specialties in the district office.

(6) Environmental Hazards. Investigate all Safety Improvement Reports submitted by the public and initiate appropriate corrective action. Seek out environmental conditions that may be hazardous to flight and initiate action to correct the condition.

(7) Operator Contact. Meet with air taxi operators, flight schools, agricultural operators, and other certificated air agencies to advise and assist them in establishing organizational safety programs.

(8) Preseasonal Refresher. Ensure that aircraft owners and pilots are continually advised of the preventive measures to be taken against operational hazards associated with the approaching season.

#### 14. AIR CARRIER.

##### a. Airworthiness (Avionics).

(1) Cockpit Voice Recorder (CVR) Program. Sample quality of recordings for intelligibility recovery.

(2) Reliability Program. Analyze results of component removal rates and confirmed failures.

(3) Ground Proximity. Monitor maintenance programs of GPWS sensors that are critical to the system.

(4) Public Address System Program. Sample quality of public address system intelligibility.

##### b. Airworthiness (Maintenance).

\* (1) Maintenance performance. Conduct spot inspections of maintenance operations to ensure compliance with methods, techniques and practices specified by the operators' manuals and with engineering orders concerning modifications and repairs. Monitor the supervision of production and inspection personnel with regard to adequate coverage for proper accomplishment of work and level of inspection participation in relation to assuring proper maintenance accomplishment.

(2) Methods and procedures. Review the operators' methods and procedures for assigning independent inspection of specific phases of maintenance operations and for final area inspections subsequent to substantial maintenance operations.

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\* (3) Quality control provisions. Review maintenance program changes and engineering orders for adequate quality control provisions.

(4) Airworthiness Directive Compliance. Monitor the current status of applicable airworthiness directives with particular emphasis on the method of recording and complying with repetitive directives.

(5) Continuing Analysis and Surveillance. Monitor the procedures the operator has established for the continuing analysis and surveillance of its inspection and maintenance programs and ensure the system encompasses contract agency activity.

(6) Maintenance Review Board (MRB) Implementation and Control.

Ensure that MRB required inspections are properly scheduled with regard to fleet size, sample size and thresholds. Determine that inspection findings are properly analyzed and credited and the MRB inspection items are identified in a manner conducive to adequate inspection and tracking.

\* (7) Reliability Programs. Monitor reliability programs with emphasis on data review and analysis for substantiation of escalations and changes to the programs.

c. Operations.

(1) Crew Training. Monitor flight and cabin crew training to assure that the contents of the approved training program are being complied with. Determine that training devices and mockups provide for the necessary realism and transfer of learning. Assure that simulators are maintained to the same standards required for original approval.

(2) Cabin Safety. Conduct cabin en route inspections in accordance with current directives to assure the adequacy of flight attendants' training and crew procedures. Determine that emergency/cabin equipment meets the requirements of the regulations.

(3) En Route Inspections. Conduct cockpit en route inspections to ascertain that the overall operational environment (crew procedures, ATC, facilities, airports, runways, etc.) provide for the highest level of safety. Particular emphasis should be focused on adherence to prescribed operational procedures during approach and landing and the decisionmaking process in the cockpit.

(4) Dispatch. Assure that air carriers have the capability to provide for expeditious notification to flights of all potentially hazardous weather conditions particularly low level wind shear, thunderstorm activity and known or forecast areas of clear air turbulence.

\* (5) Upgrading Pilots. Conduct en routes with emphasis on proficiency of pilots recently upgraded from second officers to first officers.

d. Commuter/Air Taxi Operations.

(1) Part 135. Monitor Part 135 inspection and surveillance programs of assigned operators to ensure that air taxi operators and commercial operators can conduct operations for which they are authorized by applicable regulations.

(a) Increased Emphasis on Commuter Operations.

1 Proficiency/competency flight checks. Conduct or observe all proficiency/competency flight checks, if resources permit.

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\* 2 En route inspections. Conduct en route inspections to ascertain the overall operational environment provides the highest level of safety. Particular attention should be given to the adherence to operational procedures in the areas of required approach callouts and crew management as it pertains to crew concept and resource management.

3 Weight and balance procedures. Monitor weight and balance procedures and computations to determine that the carrier is operating with a satisfactory weight and balance unit ensuring proper loadings for all flights.

4 Monitor flight and ground training programs. Monitor all training programs to assure contents of approved training programs are being complied with. Determine that approved training devices provide necessary realism and transfer of learning. Assure airplane simulators are maintained to proper standards and that required periodic checks are performed.

15. HAZARDOUS MATERIALS ACTIVITIES (ALL SPECIALTIES). Assure that all persons carrying hazardous materials in air commerce are qualified and comply with the requirements of the regulations and that shippers offering hazardous materials for air transportation comply with the applicable regulations for that shipment. (Pending reassignment of this function to the Regional Air Transportation Security Divisions). \*

16. TRAINING.

a. Technical Training - Flight

(1) Priorities. The increased activity in civil aviation results in increased needs for trained personnel. Inspectors administering Part 135 proficiency/competency checks shall meet the requirements of Order 8710.4 Chapter 3 and to the highest extent possible have successfully passed a PIC check in that make and model aircraft. In order to allocate limited resources to meet the most urgent requirements, the following priorities are established:

(a) Initial Qualification Training.

1 Air Carrier Operations Inspectors performing airman certification work functions, General Aviation Operations Inspectors (Executive and Air Taxi Specialists) and Engineering Flight Test Pilots.

2 Other Air Carrier Operations Inspectors.

3 General Aviation Operations Inspectors (includes principal and supervising inspectors).

4 Airspace System Inspection Pilots, Flight Inspection/Procedures Specialists (including Standards Development Pilots and Regional Flight Inspection and Procedures Staff Pilots).

5 All other Regional and all Washington Headquarters Flight Standards pilots.

6 All other Flight Standards pilot personnel having justifiable need for this training.

7 All other agency pilot personnel having justifiable need for this training.

(b) Recurrent/Refresher Training.

1 Air Carrier Operations Inspectors performing airman certification work functions, General Aviation Operations Inspectors (Executive and Air Taxi Specialists) and Engineering Flight Test Pilots.

2 Other Air Carrier Operations Inspectors.

3 General Aviation Operations Inspectors (include principal and supervising inspectors).

4 Airspace System Inspection Pilots, Flight Inspection/Procedures Specialists (including Standards Development Pilots and Region Flight Inspection and Procedures Staff Pilots).

5 All other Regional and all Washington Headquarters Flight Standards pilots.

6 All other Flight Standards pilot personnel having justifiable need for this training.

7 All other agency pilot personnel having justifiable need for this training.

b. Technical Training - Nonflight. Nonflight technical training should emphasize the changes occurring in equipment, techniques and procedures. Emphasis should be placed on the following:

(1) Techniques and procedures applicable to new aircraft and equipment.

(2) Reliability program/condition monitoring.

(3) Familiarity with systems and equipment utilizing computer technology developments and the resulting changes in practices due to the widespread application of microprocessors.

17. - 20. RESERVED.

